

AUGUST 1922 ~ No 199

Monthly

A Reference for Buyers

HITCHCOCK'S
**MACHINE
TOOL LIST**

Distributed Free to Machine Tool
Users Everywhere in the United States and to
Dealers in American Machinery Abroad

Published by
A. H. HITCHCOCK
1220-1235 Caxton Building
Chicago

FOR INDEXES SEE LAST PAGES

TO CHANGE
THE SPEED TURN
THE HAND WHEEL



These are truly "any speed" motors. You are not limited to a few fixed speeds but can get any imaginable speed within high and low limits of motor.

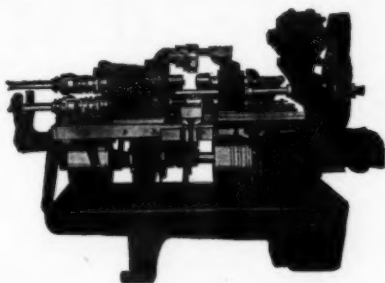
RELIANCE ELECTRIC & ENGINE CO.

1050 Franklin Road, Cleveland, Ohio

BRANCHES: Boston, New York,
Philadelphia, Pittsburgh, Chicago,
Cincinnati, Detroit



Type **AS** Adjustable Speed
RELIANCE MOTORS



Replacement

Many manufacturers are today getting ready for the normal continuance of their business. Replacement of worn-out equipment is just one of the logical steps in this preparation.

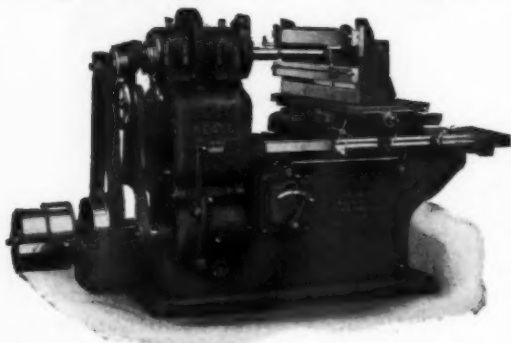
And it is the reason why many *new* ACME AUTOMATICS are being installed along with new tooling methods for their present machines.

Now built in capacities up to 4" diameter

THE NATIONAL ACME CO.
CLEVELAND, OHIO

NEW YORK BOSTON CHICAGO DETROIT BUFFALO

A New HEALD Cylinder Grinder

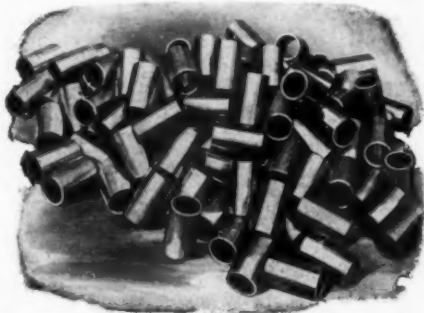


Ideal for the Manufacturer or Cylinder Regrinder

The HEALD Style No. 50 Cylinder Grinder is an ideal machine for both the manufacturer and the repair shop. It is unusually massive, simple to operate, and has an hydraulic drive for the table instantly giving any speed desired, enabling the operator to get an unusually fine finish. With this drive it is possible to reverse the table at any desired point without shock or noise.

Whether you are a manufacturer or expect to go into the regrinding business, you should look into its advantages at once.

The Heald Machine Co.
6 New Bond St., WORCESTER, MASS.



Bunting Bushings for Automotive Needs

Bunting carries constantly in stock all completely finished bushings in daily demand by the automotive and machine-building trade. These are ready for instant delivery from factory and all branches. All are priced on the long production basis.

Stock List "W" gives sizes and prices of 150 plain bushings in usual use in all classes of machines.

Bunting's Piston Pin list gives 54 different piston pin bushings in common demand. Write for these lists.

The Bunting Brass & Bronze Co.

755 Spencer St., Toledo, Ohio

NEW YORK
Grand Central Palace
Vanderbilt 7300

CHICAGO
722 S. Michigan Ave.
Wabash 9153

CLEVELAND
1362 E. 6th Street
Main 5991

SAN FRANCISCO
198 Second St. Cor. Howard
Douglas 6245

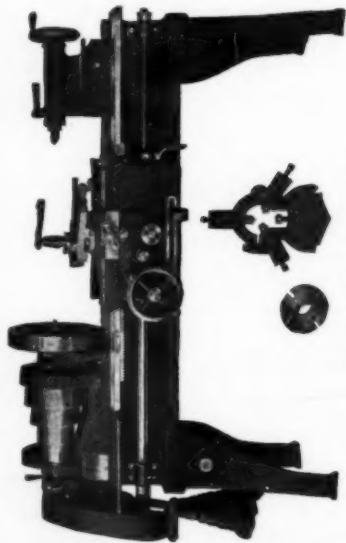
BOSTON
36 Oliver St.
Main 8483



Barnes Lathes 9 to 18-inch swing

Small lathes for
model and ex-
perimental work.

Large size for
general machine,
repair shop and
garage work.



Send for Catalog

W. F. & John Barnes Co., 123 Ruby St., Rockford, Ill.

PRYIBIL



Manufacturers and
dealers of machine
tools, lathes and
woodworking
machinery.

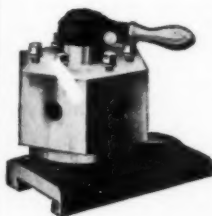
Catalogues and prices on request

ESTABLISHED 1859

**P. PRYIBIL MACHINE CO.
INCORPORATED**

512-524 West 41st Street, New York, N. Y.

Help Yourself—



Your Product

can be manufactured
cheaper by an F. & S.
Turret.

Install one of these at-
tachments on your Lathe
and note the increase in
production.

FAY & SCOTT, DEXTER, ME.

Hollow Bored Forgings and Steel Shafts

That are Right in Quality, Prices and Deliveries



Piston Rods
Clutch Shafts
Lathe Spindles

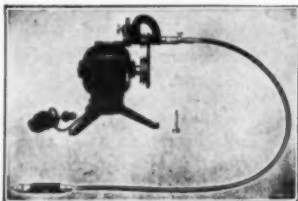
Rams
Steel Pipes
Etc., Etc.

Try us on your present needs; send blueprints

American Hollow Boring Co.
Erie, Penna.

The "Hard to Reach" places are easy with Haskins Equipment

Write for catalog No. 36



It will show
you how

**Haskins'
Flexible
Shafts**

will increase
your profits.

R. G. Haskins Company
29 So. Desplaines St., Chicago, Ill.

Shapers, Lathes and Millers



Moderate prices with
highest grade materials and workmanship.

Step toe Shapers, Millers and Lathes should be your first consideration in equipping your machine shop.



14"x6'—\$400.00

16"x6'— 450.00

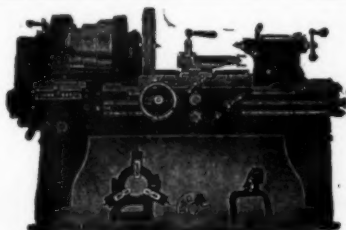
With Quick Change
Gear Box \$85.00 extra

Send for complete Catalogue

THE JOHN STEPTOE COMPANY

2951 Colerain Ave.,

CINCINNATI, OHIO



The 18" Heavy Duty Quick Change Gear MUELLER Engine Lathe is a marvel for rigidity, ease of control, and durability. It is the kind of Lathe you need in your shop to meet present day competition.

Let us tell you all about it

The Mueller Machine Tool Company

Radial Drills and Lathes

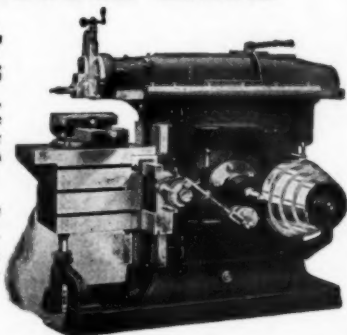
ESTABLISHED 1902

CINCINNATI, O.

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through
Speed Box.

28" and 32"
Back Gear-
ed Crank,
Single Pul-
ley Drive.

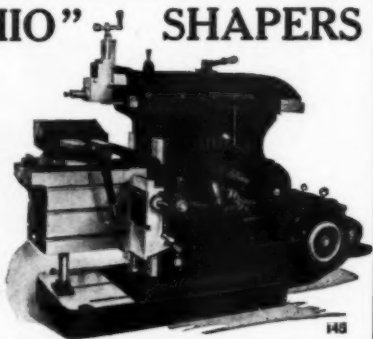


The Smith & Mills Co. Station B., Cincinnati, O., U.S.A.

"OHIO" SHAPERS

Accuracy
Power
Long Life
Plus
"OHIO"
QUALITY

All the way
through



The Ohio Machine Tool Co.

Established 1887

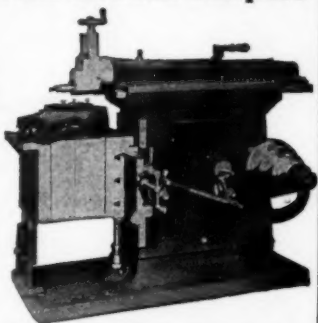
817 So. Leighton St.,

KENTON, OHIO

Hollingworth Complete Line of B. G. Crank Shapers

12", 14", 16", 20",
24", 28" and 32",
with cone pul-
ley, single pul-
ley or motor
drive—all with
table supports.

Long experi-
ence in manu-
facturing ena-
bles us to give
inside prices
for quality.

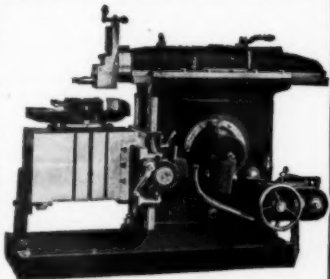


Hollingworth Machine Tool Co.
2nd & Greenup Sts., Covington, Ky.

COLUMBIA SHAPERS

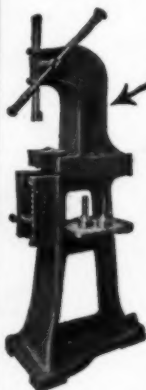
Complete with
Ring-oiling bearings.
Quick-change feed.
Extra large table.
Effective table sup-
port.
Heavy Arch Ram.
Extension base, pan
type.
Rocker block taper
gibbed.
One lever for locking
cross rail to column
—and many other
features of proven
merit—

*Afford Maximum
Service and
Satisfaction*



16", 20", 24", 28", 32"
Cone, Single Pulley or Motor Drive

The Columbia Machine Tool Company
Hamilton, Ohio



*See that
strengthening
rib!*

NICHOLSON ARBOR PRESSES are built for the hardest service—best semi-steel frames; heat-treated chrome-nickel steel racks, pinions and levers. Adjustable shelves for any length arbor or shaft. Note also handy shelf for tools. Five sizes, for every kind of machine shop and garage work. Also—

Nicholson Expanding Mandrels

Save Space, Time, Labor

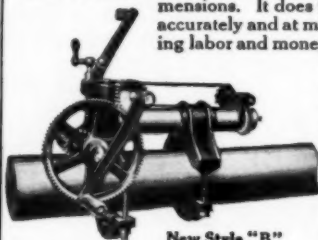
Get details of 30-day trial offer

W. H. Nicholson & Co.

117 Oregon St., Wilkes-Barre, Pa.

A Strong Portable Key-Way Cutter

This handy little tool is easily taken right to the job where it cuts key-ways of just exactly the right dimensions. It does the work quickly, accurately and at minimum cost, saving labor and money. Just clamp the tool to the shaft and turn the crank.



New Style "B"

Style "B" has six milling cutters and cuts keyways from $\frac{1}{4}$ " to 2" wide, in shafting 2" to 8" in diam. and 12" long without resetting.

THE BUCHER-SMITH CO.
East Liverpool, Ohio



Type BB

Manhattan FOUR-POST Screw Press

80-Ton Pressure!
Table, 20"x36"

A One-Man Machine which saves hours of time in fitting dies—so convenient that the tool maker requires no help. Die can be mounted on the large bed in any desired position. Affords perfect alignment between punch and die.

Also built in three smaller sizes.

Manhattan Grinder

A surface grinder that is silent, powerful and accurate. Non-vibrating wheel. You ought to know about the various special features.

Literature mailed gladly

**MANHATTAN MACHINE
AND TOOL WORKS**

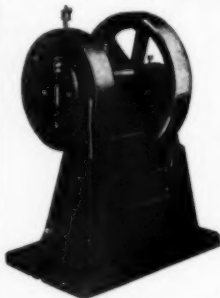
Dept. A

GRAND RAPIDS,

MICHIGAN



For reducing stock to circular form by quick, powerful blows—



The Etna Rotary Swager

For the quick and accurate pointing, tapering or reduction of stock to circular form by striking 3,000 or more powerful blows a minute with a pair of grooved dies.

When replacing power hammers, it has often multiplied production five to ten times.

Made in regular sizes to swage $\frac{1}{4}$ " to $4\frac{1}{2}$ " diameter. Any reasonable change in size made to suit.

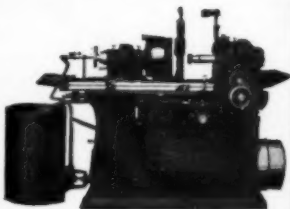
Write for Catalog. It shows interesting production figures.

The Etna Manufacturing Co., TOLEDO, OHIO

"HYDROIL" Internal Grinder

for
Greater Production
**BELL-MOUTH
ELIMINATED**
Accuracy
Finish

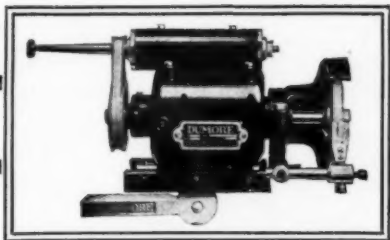
This machine has a table speed up to 30 odd feet a minute. On short strokes it will reverse 300 times per minute without shock or hand operation.



We will be pleased to give you complete details in substantiation of our claims. Write for bulletin G280H.

MACHINE TOOL DIVISION





No. 2-AG Grinder, 30,000 R. P. M.

ATTACHED in a moment to lathe, shaper or milling machine, the No. 2-A. G. DUMORE is instantly busy on internal work, or grinding flat, concave or convex surfaces. And doing it all without the tearing down of original set up!

Light in weight, coming completely equipped with endless canvas belt, cutter grinder rest, cross-feed lever, cord, plug and hardwood carrying case, this efficient grinder offers to alert buyers an opportunity to make a paying investment.

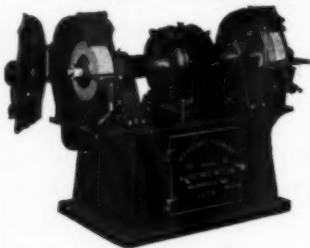
Your dealer sells the DUMORE No. 2-A. G. Ask him about it *today!*

WISCONSIN ELECTRIC COMPANY
4348 Sixteenth Street, RACINE, WISCONSIN

DUMORE HIGH SPEED **GRINDERS**

Do You Know Marschke Grinders?

Heavy Duty—Safety Hood—Motor Drive



They have greater convenience; larger, more profitable output; vibration is practically eliminated.

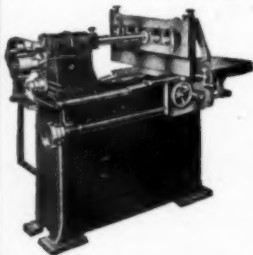
The patented hood gives greater safety; complete exhaust system; SKF ball bearings thru-out. Enclosed motor construction, a. c. or d. c., and other desirable features.

Improved Grinders in various types and sizes. What do you need?

Marschke Mfg. Co., Inc., Indianapolis,
Indiana

Regrind Auto Cylinders

There's money in it



The "SCHMIDT" Internal Grinder

Regrinds all makes and sizes of tractor, truck and automobile cylinders.

Handles six Ford blocks a day; larger ones in proportion.

A machine of broad range, extreme accuracy, large production and pleasing simplicity.

Write for our proposition and look it over

B. L. Schmidt Co., Dept. A 8, Davenport, Ia.

— BLOUNT —

Ball Bearing



Motor Grinders

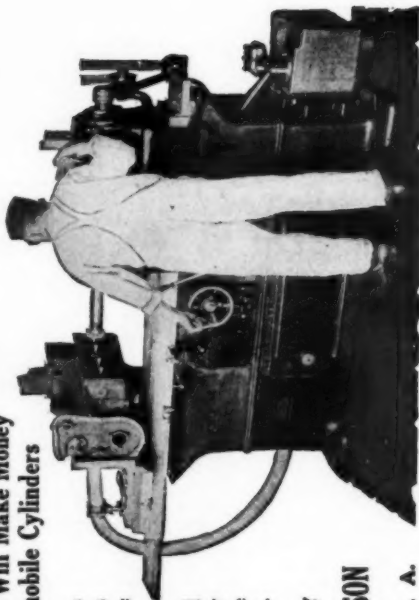
Ask your dealer for prices

J. G. BLOUNT CO., Everett, Mass.

AUTO REPAIR SHOPS

The Whitney Cylinder Grinder Will Make Money
For You Regrinding Automobile Cylinders

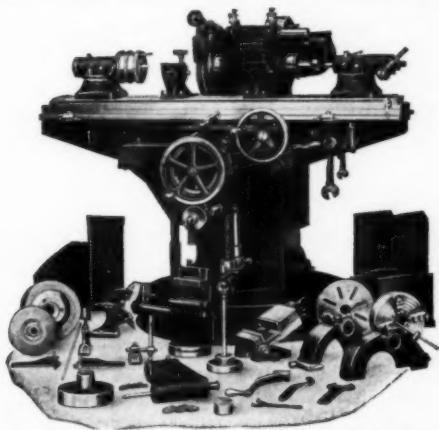
The grinding wheel travels in a true circle and grinds off only enough to make a hole that is round and straight. This machine does the work right and does it quick. That's why you can do a profitable business with a Whitney.



Write for new catalog

BAXTER D. WHITNEY & SON
Incorporated
WINCHENDON, MASS., U. S. A.

UNSURPASSED plain, surface, edge, die, cutter and internal GRINDING



On the Thompson Universal Grinder

A valuable exclusive feature is this—the grinding wheel is kept in a fixed position, while the work is easily and quickly adjusted to the desired position relative to the wheel. This universal tool takes care of practically every grinding operation which may come up in your shop, and will save money on all of them.

Write for the interesting, illustrated folder

OUR SELLING REPRESENTATIVES:—

Notch & Merryweather Mch. Co.
Cleveland, Ohio
Manning, Maxwell & Moore, Inc.
New York, Philadelphia, Pittsburgh,
Buffalo, Cincinnati,
St. Louis, Seattle
H.H. Clarke & Co.,
Boston, Mass.
Kemp Machinery Co.,
Baltimore, Md.

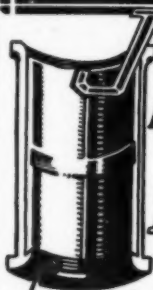
Riverside Machinery Depot, Detroit, Mich.
Coghlin-Kirkby Mch. & Sup. Co., Toledo, O.
Wayne Mch. Co.,
Ft. Wayne, Ind.
Dayton, Ohio
Chicago, Ill.
F. E. Satterlee Co.,
Minneapolis, Minn.
F. O. Stallman Supply Co.,
San Francisco,
Los Angeles, Calif.

FOREIGN:

Bevan & Edwards Pty., Ltd.,
Melbourne, Sydney

Selcon Engineering Co., London, Belgium,
France, Italy

THE THOMPSON GRINDER CO., Springfield, Ohio



JOHNSON

*Babbit Lined Bearings
And Bronze*

BUSHINGS



for Products Of Super-Quality

JOHNSON BRONZE COMPANY

NEW CASTLE PA.

Style D.



Opened.

Tucker Oil Hole Covers

on your product assures
your customers that you
have safeguarded their in-
terest by furnishing prac-
tical and efficient protec-
tion to all bearings.

Style G.



Opened.

A Style and Size for Every Purpose

Style A.



Style B.



Style C.



Style D.



Style E.



Style F.
Drive.



Style G.



W. C. & F. C. TUCKER, Hartford, Conn., U.S.A.

FOREIGN AGENTS: Fenwick Freves & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

CANEDY-OTTO



C-O No. 3 GRINDER--All bearings made with hydraulically pressed graphite cones. Bearings are burnished to conform to the exact size of the spindles. All chattering is eliminated. Guards can be attached.



The advanced design, extreme accuracy and great durability of C-O Equipment is saving time and labor costs in thousands of shops and at the same time, bettering the quality of the work turned out. C-O Equipment more than pays its way in better satisfied customers—and more of them.

Fifty years of shop equipment experience stands back of every item in the line. Write for complete catalog, or specific information on any needed equipment.

Address Dept. D

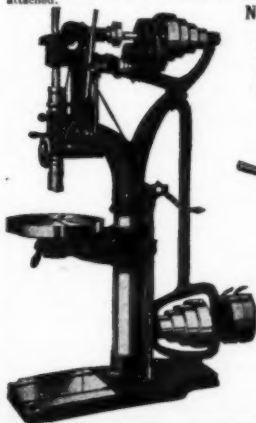
Canedy-Otto Mfg. Co.

Manufacturers of Automotive Equipment, Drills, Punches, Shears, Shrinkers, Countershafts, Grinders, Buffers, Forges, Blowers, Tuyere Irons, Blast Gates.

Main Office and Factory

Chicago Heights, Illinois

New York Office, Grand Central Palace



C-O 20-INCH DRILL.--(left) With 12-in. spindle travel, boring to center of 21-in. circle, doing work heretofore requiring 24-in. or 26-in. Sliding Head Drill. Automatic, powerful, simple feed. Eight speeds through back gear.

C-O No. 1 ARBOR PRESS--Large enough for a great variety of work. Reinforced base. Capacity, 3 tons. Diameter of work, 14-in.





Style "A"



The Hinge



Style "U"



Style "B"



Style "G"



Style "O"



Style "L"



Style "T"

GITS OIL CUPS

Give perfect satisfaction where others fail. State style and size in which you are interested, and we will send free samples and catalog.

GITS BROS. MFG. CO
1940 50. KILBOURN AVE., CHICAGO



Style "H"



GENSCO Oil Hole Cover

To attach "Gensco" Covers, drill a hole—requires no tapping and assembling with screw driver. Save you money—are neat—cannot be lost off machine. All oil goes in the hole. May be used on the side as well as on the top—the Spring Feather holds them in place.

Millions in daily use.

$\frac{1}{4}$ -inch mostly used.

Net Prices the Thousand:

5/32-\$32.50 $\frac{1}{4}$ -\$35.00 5/16-\$37.50

GENERAL SCREW COMPANY

Cincinnati, Ohio, U. S. A.

Manufacturers of Screw Machine Products.



Reasons why "Rarefieds" are superior dust collectors

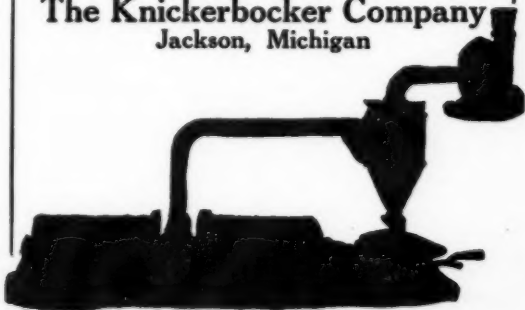
Greater Efficiency—After thoro investigation and trial, a number of the largest plants in the country installed from 5 to 20 "Rarefieds"—one is using 26 at present. A list of these users will be sent you on request.

Save Power—They never fail to save power. One firm is now doing with 25 electric h. p. what formerly took 45 h. p.—a net saving in this instance of 20 h. p.

Reduce Repairs—Abrasion of fan parts is prevented because the "Rarefied" collects and automatically discharges the dust before the air reaches the fan. Saves labor costs because there's no cleaning out by hand.

Our interesting Booklet gives full details as to "how" and "why." Write for a copy

The Knickerbocker Company
Jackson, Michigan



—used by the machine tool trade

Tri. B. Brand Pack Carbonizer

A light, fast, long-lived carbonizing agent, widely and successfully used by the machine tool trade and in many lines of steel fabrication for deep hardening in boxes in muffle furnaces.

This ideal product is made entirely of hard carbons—there is not an ounce of any volatile matter in its composition, and consequently there's no internal combustion as is the case with raw bone. Nor is it as costly as the so-called "patented compounds."

And then there's Ferro Case—

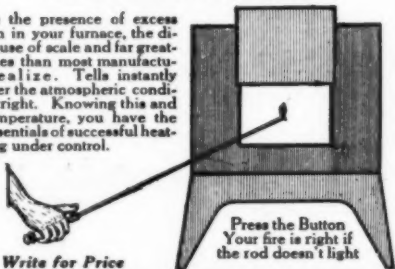
for case-hardening—scientifically prepared—that is much superior to cyanide, being more efficient, economical and *safe*. It is non-poisonous. Made in two grades. A trial order is all we ask.

C. G. BUCHANAN CHEMICAL CO., Cincinnati,
Ohio—Sta. II.

Something New — And Good

The Bennett Detectorod

Shows the presence of excess oxygen in your furnace, the direct cause of scale and far greater losses than most manufacturers realize. Tells instantly whether the atmospheric condition is right. Knowing this and the temperature, you have the two essentials of successful heat-treating under control.



Write for Price

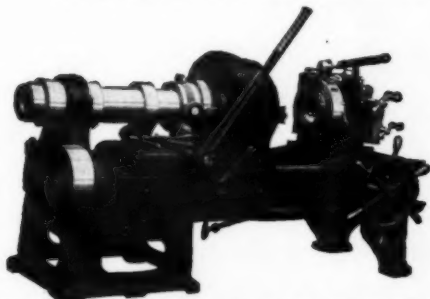
Bennett Metal Treating Co.

Elmwood, Conn., U. S. A.

Also ask us about the Bennett Furnace

Big Quantities—

Or any odd job of pipe-threading
done at lowest cost on B. & Ks.



(No. 4 P. D. Q. C. Improved. Belt Drive. Cap. 1" to 4". All Gears are Covered.)

B & K. PIPE MACHINES are so convenient and so adaptable—changes are made so easily and so accurately—that they are by far the best for all jobs—big or little.

A gear box drive enables the operator always to have the right threading speed. You get instant adjustment to the 1000th of an inch without the use of tools. Dies can be changed without removing a screw. There are 17 styles and sizes of machines from which to make a selection for your exact needs.

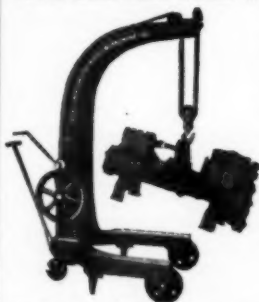
There are many more features of excellence with which we shall be glad to acquaint you—features that mean top-notch efficiency and rock-bottom costs. *Asking for information does not obligate you in any way.*

Bignall & Keeler Machine Works Edwardsville, Illinois

Sales Agents: Manning, Maxwell & Moore, New York, N. Y.

Chicago Philadelphia Boston St. Louis Pittsburgh Cleveland New Haven
Cincinnati Buffalo Syracuse Detroit Milwaukee San Francisco Seattle

You Can Lift Tons with a "CanTon"



You, too, will say it's the handiest and "savingest" tool ever used in your shop.

The "CanTon" Portable Crane, Hoist and Truck

with a one-man crew, easily does the work which ordinarily is a heavy task for 6 to 10 men. If that doesn't reduce shop costs, we don't know what will. And it sells at an attractive price.

Write for Bulletin E-8

Canton Foundry and Machine Co.
Canton, Ohio

New York Office: 45 West 18th Street, Second Floor

A Profit of 500% a Year

"TOWSLEY" TRUCKS

For Every Purpose
What do you need?



Warehouse
Style,
Shell
Construction,
Box
Trucks,
Slatted
Package
Trucks,
Etc., Etc.

Write us for details of big truck profits

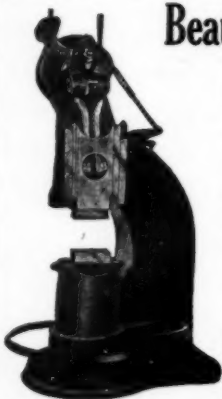
John T. Towsley Mfg. Co., Cincinnati, Ohio

Wood-Working Machines—Gluing Appliances—Factory Trucks

MAGAZINE FEED Screw Driving means reducing by 65 per cent and upwards the cost of driving wood or machine screws, with an increased production and uniform results of machine-like precision.

Reynolds Power Driven Automatic "Magazine Feed" Screw Driving Machines are not an experiment—that stage was passed long ago. Hundreds of large concerns, many of national reputation, are using them with great success in numbers ranging from one to thirty machines and over—often paying for themselves three or four times a year.

Send dimensions over all of your work, with the gauge and length of screws you are driving, to The Reynolds Machine Company, Dept. H. H., Massillon, Ohio, and they will lay before you, without obligating you in any way, a specific proposition for putting your screw driving department on a modern manufacturing basis.



Beaudry Hammers

For General Forging

Quicker than Steam,
more powerful than
Air, more flexible
than either, and
lower first and oper-
ating costs.

Catalogue on request

BEAUDRY & CO., Inc.
45 Bromfield St.,
BOSTON, MASS.

T.H.L. Front Lever Bench Punch

Malleable iron body; working
parts hardened. Steel shaft and
plunger. Die cannot lose align-
ment with punch. All parts inter-
changeable. Built for hardest,
toughest work.

PRICE \$50

Extra Punches, 20 cents each;
extra dies, 25 cents.

Capacity 13/32" thru 1/4" steel,
11/32" thru 5/16". Punches up
to 1/2". Weight, 70 lbs.

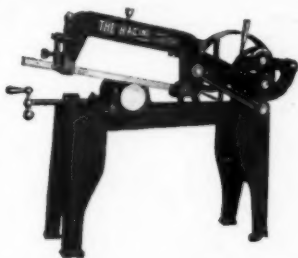
A good buy; can ship promptly

**T. H. LEWTHWAITE
MACHINE CO.**

(Est. 1890)

417 E. 31st St., NEW YORK





More Work at Less Cost

"RACINE" High Speed METAL CUTTING MACHINES

Racine High Speed Metal Cutting Machines will cut more metal in less time, at lower cost, and more accurately than any metal saw on the market. A saw blade on a "Racine" will usually outlast five blades on the ordinary metal saw. This is due to the *positive return lift* of the *Racine*. The blade does not drag on the work on the return stroke, and cannot bind or break. Because of this feature, maximum speed, accuracy, and economy are achieved. Let us send you the full facts—descriptive information and prices. There is a "Racine" of the right size to meet your requirements.

Racine Tool & Machine Co.

Catalog H


Racine, Wis., U. S. A.

Mechanical Lift-Positive Draw Cut

"QUICKWORK"

Registered in U.S.A. and Foreign Countries

Rotary Shears

 **Prices Reduced Sept. 1, 1921**

Made in 7 Sizes

Cut all gauges of sheet and plate metal up to 1 inch thick in straight or irregular shapes and openings without cutting in from side of sheet. Leaves square, true edge that requires no finishing. Used in building ships, boilers, tanks, cars & general plate and sheet metal work.

Save 50 to 90%

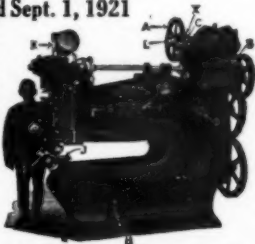
Eliminates Oxyacetylene cutting and plate planing

Write for catalogue No. 60

Patented June 3, 1913; Aug. 26, 1921.

THE QUICKWORK COMPANY, St. Marys, Ohio, U. S. A.

Cable Address "Quickwork." Codes: W. U., General, Bentley's, Lohier's, ABC 5th Edition



Peter's Abrasive Metal Saw

Saves Time and Material In Your Tool Room and Shop

Cuts quickly and accurately, square or otherwise, at option of operator. Eliminates nicking and breaking, prevents waste of stock. Equally good with high speed steel, angles, channels, tees, brass or iron. Doesn't draw temper.

8" Size \$22.50, with C. S.

Splendid for tool room. Cuts high-speed steel up to 1" square.

12" Size \$60, with C. S.

Cuts up to 2 1/2" diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

Write us or ask your dealer

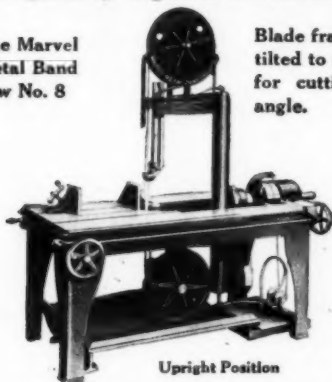
PETER BROTHERS MFG. CO.
115 Railroad St., Algonquin, Ill.



Marvel Universal Metal Band Saw

Capacity Up To 18 Inches

The Marvel
Metal Band
Saw No. 8



Blade frame can be tilted to right or left for cutting on an angle.

Upright Position

Equipped with one of these first class machines, your shop is prepared for all kinds of sawing, cutting off square, or on an angle right or left. Handles work large or small with ease and accuracy. *The work is held stationary in the vise and the blade feeds itself through the work.* See the big bed or work table with lots of room for handling your work, tools, etc.



Saves
stock

Saves
time

Saves
labor

Saves
money

Metal cutting saws for all needs; write for Catalog

Armstrong-Blum Mfg. Co.

314 N. Francisco Ave.,



Chicago, Ill.

ATLAS

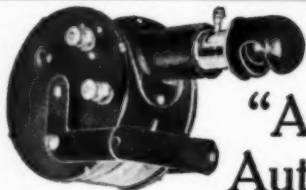
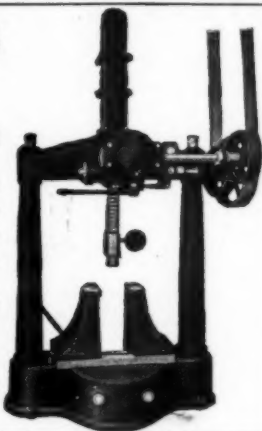
30 Ton

Power Press

will give you
greatest possible
efficiency on your
production work.

*ATLAS Presses are built
in all sizes and types.*

Atlas Press Co.
Kalamazoo, Mich., U.S.A.



Equip your
car with an

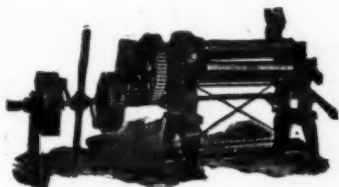
"Autex"

Auto Reel

A perfect-working Extension Reel that is readily and easily mounted on any make of Automobile. Can be used on dash, under hood, or other places. Light taken to any part of car. Cord rewinds on Reel automatically.

Price \$6.00 prepaid

The Cincinnati Specialty Mfg. Co., Inc.
1913-21 Powers St., Cincinnati, Ohio



BELOIT

INITIAL TYPE

Sheet & Plate Bending Rolls

The Beloit Initial, or side bending, type roll has been designed to meet the demand for a strong, efficient, quick acting roll for use where the heavier Pyramid Type is not required. It is especially adaptable for use in shops handling sheet metal and for the lighter class of work in Boiler Shops, such as stacks, breeching small tanks, and the like.

The upper roll is geared to the adjustable lower roll thus pinching the plate, while the idle roll, which is also adjustable, does the bending. The outer housing is hinged and the upper roll is raised by throwing a cam lever, thus permitting the removal of sheets bent to a full circle. All styles of these rolls are double back geared and require a minimum amount of power.

Built in twenty-six sizes with capacities up to 3/16" and from 14" to 96" between housings.

HENDLEY & WHITTEMORE CO.

100 S. State St.,

BELOIT, WIS.



**Hand
Power
Angle
Shear
AND
Notch-
ers**

THE LITTLE **BLACKSMITH**



WRITE for BOOKLET

**J. F. KIDDER MFG.
COMPANY**

BURLINGTON, VERMONT

The Only Difference

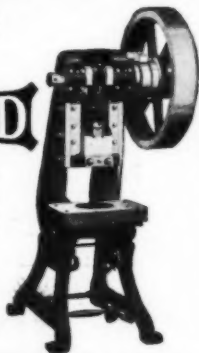
is not just price. The big thing is **service**. An investigation of the merits of

**HIGH DUTY
ROCKFORD
PUNCH PRESSES**

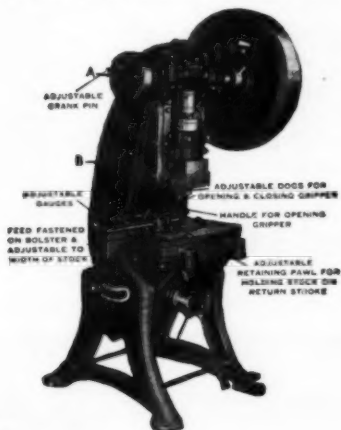
will give you a new idea of what you should get in punch press service. Definite, dependable reliability under all working conditions.

Write today for complete construction details.

**Rockford Iron Works
ROCKFORD, ILL.**



Walsh Automatic
Push Or Pull Feed For Power
 Presses
 For Feeding Roll or Strip Stock



THE FEED fastens to standard bolster, and is easily attached to power presses of any pattern. Adjustment in thousandths to feed 0" to 6" on stock $\frac{3}{4}$ " to 6" wide, which may be *automatically pulled or pushed* to the die, as desired.

THE GREAT VALUE of this Automatic Feed will be apparent to any experienced shop man. The additional practical usefulness it gives to the power press is far beyond its moderate cost.

Let us post you; you may find the information valuable

Walsh Press & Die Co.
 4709 W. Kinzie St., Chicago, Ill.

Also Manufacturers of a Complete Line of Power Presses

Since 1905

This

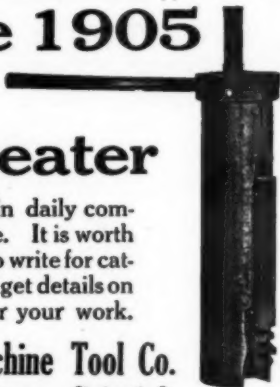
Keyseater

Has been in daily commercial use. It is worth your time to write for catalog O and get details on this tool for your work.

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.



"Wear-Ever" Woodruff Chuck And Keyway Cutter

The "Wear-Ever" Woodruff Keyway Chuck insures a positive drive and true-running cutter. Eliminates making collet chucks. Fits all standard makes of milling machines, and is made in all tapers, such as Brown & Sharpe and Jarno tapers.

Let us supply you with cutters

No extra charge for the square

Centers by the shank



Drives by the square

**SCULLY-JONES & COMPANY, 13th and Robey Streets
CHICAGO, ILLINOIS**

Lower Your Keyseating Costs

With the New Catlin No. 1

Rapid
Simple
Durable
Efficient
Accurate
Economical

The popularity of Catlin Keyseaters in large automobile plants, government shops, navy yards and in foreign factories, is not based on mere fancy but on solid fact,—they first had to make good.



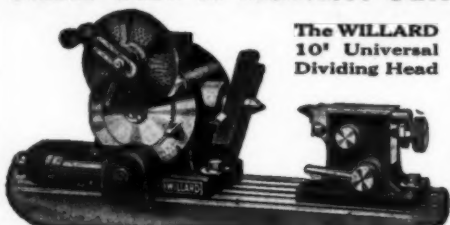
The crank motion is much easier on the cutter than the ordinary rack and pinion drive, as it enters the cut during the slow part of the stroke. The work is instantly centered by the bore, and the keyseat is accurately cut with proper taper, whether hubs are finished or not.

Let us send you the large folder, which gives full details of construction and operation, and some very

Interesting Production Records!

Chattanooga Machinery Company
Chattanooga, Tenn.

Takes Care of Heaviest Cuts

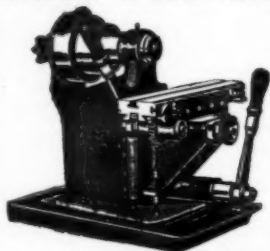


**The WILLARD
10' Universal
Dividing Head**

YOU WILL FIND these index centers reliable for any job on a milling machine. The graduated swivel head adjustable at any angle between 10 degrees below horizontal to 10 degrees beyond vertical. Clamping device is specially rigid. Spindle has No. 10 B. & S. taper and is made of the highest grade steel, hardened and ground. Head and tailstock centers made of best tool steel. Complete index plate. All parts interchangeable. Made right or left hand. *Full details sent you on request.*

The Willard - Middletown Machine Co.
Middletown, Ohio

Just The Machine



for those light cuts on details for Fire-arms, Sewing Machines, Typewriters, Bicycles, Electrical work, and a thousand and one other details used in the manufacture of the various products of the manufacturing world.

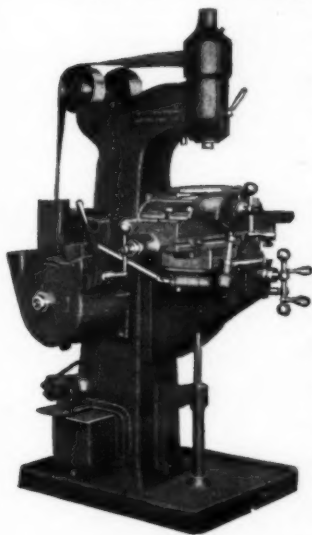
Send for descriptive circular

THE CARTER & HAKES MACHINE CO., West Winsted, Conn., U. S. A.

NEW ENGLAND AGENTS—Hill, Clarke & Co., Boston
NEW YORK AGENTS—Hardinge Sales Co., Grand Central Palace
WESTERN AGENTS—Marshall & Huschart Machinery Co., Chicago, St. Louis, Indianapolis.

The Taylor & Fenn Vertical Milling Machine

With Circular Milling Attachment



The Circular Milling Attachment, when used with our Vertical Milling Machine, affords great possibilities for continuous milling operations, for milling segments of circles, circular slots, and all varieties of circular or longitudinal milling on plain or irregular shaped pieces within its capacity.

The Attachment may be operated by either hand or power feed, and as it is driven from the main table driving shaft of the machine proper, both the power table feed and the power circular feed may be used simultaneously, which is of great advantage in certain classes of work.

SPECIFICATIONS

Working surface of table,.....	10 $\frac{1}{2}$ "
Maximum distance spindle to table,.....	9"
Height,.....	4"
Width of T slots,.....	1 $\frac{1}{2}$ "

You'll be interested in complete description; may we send it?

The Taylor & Fenn Company
Hartford, Conn., U. S. A.

The U. S. Miller and 14" Drill

Are two moderate-priced machines which should have their place in every shop.

The No. 1 U. S. Improved Hand and Weight Feed Milling Machine is a tool of quick adaptability and wide range, with more power than any similar machine of equal size. It is especially efficient in the rapid milling of small duplicate parts.

The 14" U. S. Sensitive Floor Drill cannot be excelled for drilling holes $\frac{1}{2}$ " and smaller.

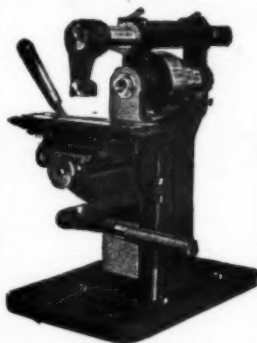
Write for full details and close prices

The United States Machine Tool Co.
Cincinnati, Ohio

This Hand Feed Miller \$155.

**Save Power—Save Room
Save Money**

That is what you do when you install Burke Milling Machines, as they take less power, need less factory space, and on account of the convenience in operation your small milling operations can be done much more rapidly than on a larger, heavier type machine.

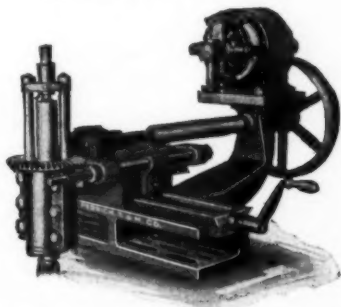


Write for Catalog, which also shows larger and smaller sizes.

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio

Without a Pedrick
Portable Milling Machine

**You Often Pay Its Price
 In Delay On One Job**



To appreciate its value just add the savings you could effect in a year by taking this handy, ever-ready tool to the job instead of bringing the job to the tool, then subtract the price. Result—net earning power.

You need this Pedrick Miller to do those big jobs that your standard machines cannot handle.

Catalogue explains all its various operations—
 a comprehensive book of reference and key
 to manifold savings. Your copy is waiting—
 shall we send it now?

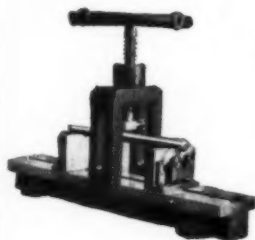
Pedrick Tool & Machine Co.

Headquarters for Portable Machine Tools
 Boring Bars, Crank Pin Turners, Pipe Benders, etc.

3644 N. Lawrence St.,

Philadelphia, Pa.

Whitney Straightening and Balancing Machine



Ball Bearing

It is not necessary to use any center to straighten a shaft. Just revolve it freely on the ball bearing rollers, find the crooked portion, and apply pressure with ball bearing screw. It is fully twice as fast as any similar machine made.

For balancing, move straightening head to one end, and use raising blocks to get required clearance.

Description and price?

Whitney Metal Tool Co.

95 Forbes Street,

Rockford, Ill.

Anderson Improved Balancing Ways

Ever-Ready—Sensitive—Reliable



They need no adjusting. The rotating discs made of chilled iron run in specially designed ball bearings and are exceptionally sensitive. You will like 'em.

Made in various sizes for balancing pulleys, gin brushes, turbine rotors, crank shafts, polishing wheels, fly wheels, etc.

"Swing"	20"	40"	60"	72"	96"
Greatest distance between standards.....	20"	30"	30"	66"	88"
Capacity in lbs.	1000	2000	2000	5000	10000
Approx. shipping weight.....	45	90	150	350	650
Code	Bend	Bid	Bis	Bib	Ben

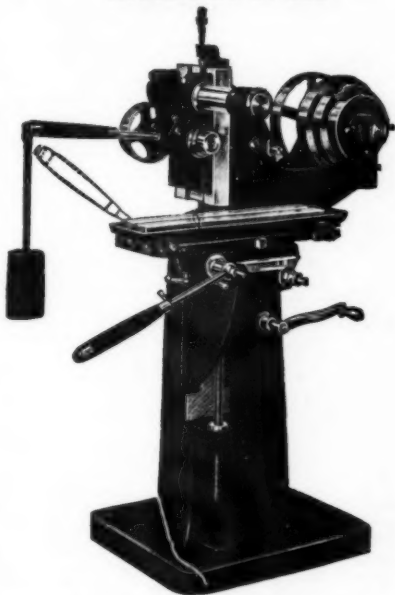
Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

1915 Kishwaukee St., Rockford, Ill.

"Whitney" Hand Miller

THOUSANDS IN USE



The Milling Machine with the SLIDING HEAD. No other design equals the "Whitney" for high production on interchangeable work. Useful every day in the year on countless operations.

Prompt Deliveries

The Whitney Mfg. Co., - Hartford, Conn.

Chains—Keys—Hand Milling Machines

CULLMAN SPROCKETS

STOCK AND TO ORDER



Diamond, Whitney, Baldwin, Duckworth and
Coventry Chains, Block, Roller and
High Speed Silent types on hand



CATALOG

CULLMAN WHEEL CO.,
1359 ALTGELD STREET

CHICAGO

Extract Oil

FROM YOUR CHIPS, SHAVINGS AND WASTE



No. 400—Capacity: 2 Bushels

The Curtis Ball Bearing Oil Extractor is built to make money by saving oil that otherwise would be wasted. In a few months' time the cost price is returned and then the saving is practically net profit.

It's a method of modern economy that should be in operation in *your* shop. Made in three sizes.

*Buy a Curtis now and you'll buy less oil for many years thereafter.
Don't delay your investigation.*

Albert B. Curtis Estate

Box 44

--:-

--:-

Worcester, Mass.

COOPER UNIVERSAL JOINTS FLEXIBLE COUPLINGS

"YOU CAN'T BREAK THEM OR WEAR THEM OUT"

Smooth; neat; only 5 simple parts; large oil space; working surfaces case-hardened; no limit to size; guaranteed stronger than shaft at any angle.

6 PATENTS



Three hundred years ago Hooke invented the Universal Joint with fixed centers. Three hundred years have elapsed and still the Hooke type of universal joints are burning up power and breaking in operation.

The Cooper Patented Universal Joint with no fixed centers is just as frictionless as the crosshead of an engine at any angle. "You can't break them or wear them out" with shaft joints are bored for. Perfect lubrication at any speed.

Sizes $\frac{1}{4}$ " to 2" in stock bored to fit YOUR shafts.

Send for one and try it out

Cooper Flexible Transmission Co., Inc.

1723 8th Ave., Brooklyn, N. Y.

Weigel Double-Wheel "Trukaster"

Has heavy plates and axles.
Easiest running, strongest and
most durable double-wheel
caster made. Lasts three times
as long as others.

"Kwality Kaster"

(See Illustration)

The strongest and most dura-
ble single caster. Won't crush
or break. Swivels on steel
machined rollers.

Write for Price List

**THE HAMILTON
CASTER & MFG. CO.
HAMILTON, OHIO**



REDFACE



PULLEYS

**SHEAVES and
FLY WHEELS**

Highest Quality

*Write for
CATALOG*

THE PYOTT FOUNDRY CO.

328 N. Sangamon St., Chicago, Ill.

How Many Holes Between Grinds?



McCrosky-Super Reamers

Are used in the Detroit Plant of the Studebaker Corporation to ream the main bores of all rear axle pinion carriers. They average from 1250 to 1400 holes between regrindings. Accurate and economical service that cannot be surpassed. The Studebaker Corporation has standardized on McCrosky-Supers.

Why don't you? Send for a McCrosky Catalog.

McCrosky Tool Corporation
Meadville, Pa., U. S. A.

Branches and Agencies in all principal cities

Export Agents: Benjamin Whittaker Inc., 21 State St., New York



New Hisey SUPER

Are more

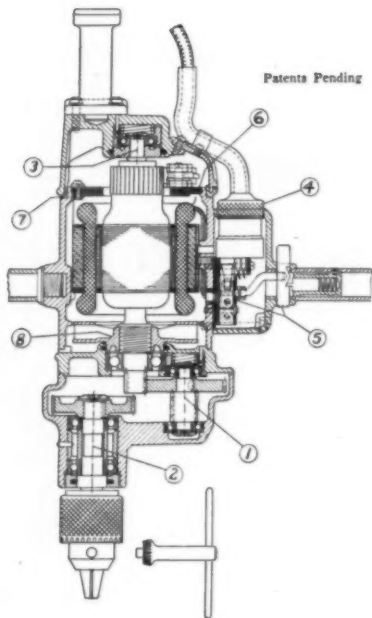
POWER need
the New Hisey SUPER

CURRENT C
capacity.

MOTOR of c
dangerously high
life of machine) a

MECHANICA
into the constructi

Patents Pending



1. Ball Bearing

2. Ball Bearing

3. Ball Bearing

4. Quick Cable

5. Famous Hisey

Exhaustive te
tinue to do more

A close tabul
drills, has p
is less than other

Exclusive Hisey

For maximum
Drill, and be conv

THE HISEY-WOLF MACHINE

AGENTS IN ALL PRIN

PER Universal Drills

more efficient from all angles

POWER necessary to do the work. There is an abundance of this in new Hisey Super Drill, and some to spare.

CURRENT CONSUMPTION is lower than any drill of same rated power.

MOTOR of our own design, is cool running. Does not operate at unusually high speed (a feature which reduces wear and adds to the machine) and is equipped with a practical commutator of liberal size.

MECHANICAL DESIGN determines the life of any machine. Look at construction of this new Hisey Super Drill.

Ball Bearing Gear Spindle

Ball Bearing Chuck Spindle

Ball Bearing Motor Shaft

Quick Cable Connector

Famous Hisey Patented Switch

6. Adjustable brush holder yoke

7. Improved vent openings, safeguard the motor and interior parts against accidental and willful abuse

8. Improved ventilating fan

Exhaustive tests have proven that Hisey Drills *will do* and *will consume* less power to do more work at lower operating cost than any other machine.

Close tabulation by prominent manufacturer using several hundred tests has proven that the maintenance (cost of up-keep) of HISEY Drills is less than other machines.

Exclusive Hisey features produce these facts.

For maximum production with uninterrupted service, insist on a Hisey and be convinced.

CHINE CO., Cincinnati, Ohio

ALL PRINCIPAL CITIES

Highest Quality **RIVETING** **And most economical**



The highest quality riveting, and the most economical, is done on the—

GRANT NOISELESS RIVET SPINNER

Highest quality, because (1), it forms perfect heads with a highly polished surface—no tool marks; and (2), it insures absolute uniformity, with any degree of tightness or looseness desired.

Most economical, because (1), its capacity is a rivet per second, and (2), it is operated at maximum efficiency with cheap labor.

*Ask for Catalog, showing several styles
Also send samples of work for riveting*

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

50,000 Pieces now burnished for the former cost of buffing only **100**
A Reduction in Cost of 99.8 Per Cent



**The
Abbott
Burnishing
Barrel**

That's the experience of one user with

The Abbott Burnishing Barrel

It saves from 75% to 99% and upwards, compared with hand polishing or buffing machines, in burnishing small metal parts. And the result is better, whether on steel, brass, copper, nickel, silver, gold or plated work.

*Write for copyrighted booklet and send samples for burnishing
All sizes of burnishing balls and soap chips for immediate shipment*

The Abbott Ball Co., Elmwood District, Hartford, Conn.

R-S Collapsible Taps

Produced by
R-S Experts

This modern tool makes good in every shop that gives it a try-out. It's the ripe product of careful and exhaustive experimenting by our corps of experts, and we recommend it to all users as being on a par with the now famous R-S (Boehm) Automatic Die Head.



A collapsing tap is more efficient than the solid kind, and the R-S is *positive* in action, so that it *cannot fail*. You can withdraw the chasers at any time because its action does not depend on springs or similar contrivances. The capacity is for 1 in. and up.

Write for Circular giving full details and interesting information

Rickert-Shafer Co.

1110 Cherry St., Erie, Pa.



Eliminate Tap Breakage

Many a tapping job has been a regular tap breaker until the operator tried out a

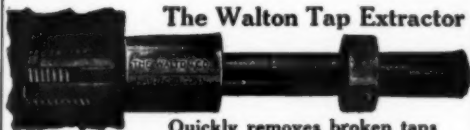
WOODSTOCK IMPROVED No-Tap-Breakage Chuck

As soon as this chuck was employed, tap troubles were over. This chuck automatically releases tap the minute it binds or strikes bottom. It will enable you to utilize about 99% of the strength of the tap without breaking it. It can be used with any automatic reverse, reversible drill press, tapping machine or lathe.

Write for details and trial offer

Peter Bros. Mfg. Co., 115 Railroad St.,
ALGONQUIN, ILL.

Why Not Laugh At Tap Breakage?



The Walton Tap Extractor

Quickly removes broken taps

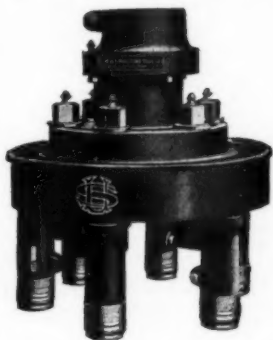
Of all the minor shop accidents, that of taps breaking at or below the surface is one of the most troublesome, on account of its comparative frequency, with loss of time and often injury to the work.

Why not order a Walton Extractor NOW and laugh at tap breakage? Once used, it becomes indispensable. It pays for itself over and over again—often the first time used.

Sizes No. 8 to 1¼". Let us describe and quote.

THE WALTON CO., Hartford, Conn.

You Don't Need A Multiple Spindle Drill



Use a
**U. S.
Multiple
Spindle
Drill Head**

on your
**Single
Spindle
Drill Press**

U. S. Multiple Spindle Drill Heads may be used on your single spindle drill press with the same speeds and feeds you use for drilling a single hole, increasing output with a material reduction in cost.

They are made with either adjustable or fixed spindles. The adjustable heads are regularly furnished with two to six spindles, and have our patented adjustment for drilling in any pattern—in squares, triangles, rectangles, ovals, straight line or staggered. Fixed spindle heads, as well as special heads of the adjustable type, made to order.

Send us sketches or blue prints of your work and let us quote on your requirements. The obligation is all ours.

The United States Drill Head Co.
Cincinnati, Ohio, U. S. A.

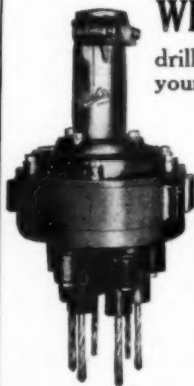
A Lot of Drilling Capacity—

This 16-inch, No. 7 Barr is a sturdy, reliable, highly efficient sensitive that will give you more service and satisfaction than you have ever bought for so small a sum. Takes drills up to $\frac{3}{4}$ -inch, and handles them effectively. It gets results.

Let us have your address for complete description.



FRANCIS REED CO., 43 Hammond St., Worcester, Mass.



Why Buy a Multiple

drill when you can accomplish your purpose just as well with

The Buhr Multiple Spindle Drill Head?

You can make set-ups on your single spindle drill press for circular, rectangular or staggered positions, and they're duplicated exactly. Arms can be rotated or moved in and out.

We also make fixed spindle drill heads to fit your work. They're all time-savers and cost reducers.

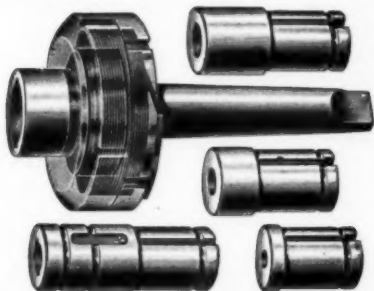
Your inquiry is invited

Nelson-Blanch Mfg. Co.
DETROIT, MICH.

New York Office: 50 Church St.

"A 'Safety' in Time Saves Nine—"

We Refer to Taps, Of Course



SAFETY Drill and Tap Holders

eliminate tap breakage and the consequent loss of time, money and temper. With the Safety you can tap at full speed to bottom of hole without danger of breaking anything. And that's because the tap instantly stops whenever it is subjected to any undue strain.

You are also enabled to change from drill to tap, and vice versa, without stopping the machine, which also naturally effects a big saving in time. The Safety is the embodiment of simplicity, efficiency and economy.

Regularly made in four sizes, 0 to 2½", but the Safety can be furnished with special sockets with friction set to carry one or two sizes of taps, which are especially useful where sizes are constantly changing.

*Prevention is always better than a cure—
Let us help you save those valuable taps*

The Beaman & Smith Co.
PROVIDENCE, RHODE ISLAND



Shows *Thor* drilling holes in cast iron frames. Also drills holes of various sizes up to $\frac{1}{2}$ " inc., in mfg., assembling, repair and maintenance work.

Thor

Portable Electric DRILL

Size UHB

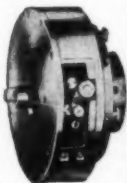
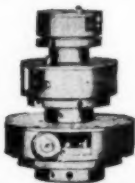
For Drilling Up To $\frac{1}{2}$ "
Reaming and Wood
Boring

*Be Right the First Time—
Use THOR Electrics*

**Independent Pneumatic
Tool Company**

600 W. Jackson Blvd., CHICAGO
Offices and Agents Everywhere

"A Head that is a Wonder!"



Mummert-Dixon Facing Heads with Automatic Feed—Save Many Costly Set-ups

Often enables you to do work that otherwise could not be done on a milling machine. Does slab facing as fast as a milling cutter, faster than a planer, at much less tool up-keep expense. The folder shows it at work on boring mills, milling machines, lathes and drill presses. Three sizes with 1-way tool feed, five with 2-way. Send us your address today.

MUMMERT-DIXON CO., Hanover, Pa.



**Watch The Corners
Dollars Saved—Dollars Made**

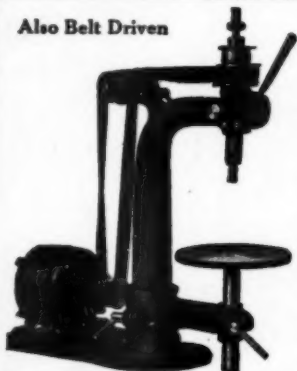
Squeeze Your \$ Of Cost

Get An *Avey* Get all the Profit

**Drive To The Limit
Double Production—Half the Labor**

**The Avey Drilling Machine Co.
Cincinnati, Ohio**

Also Belt Driven



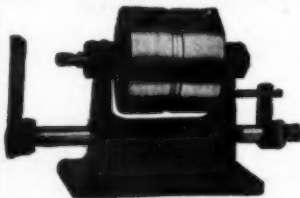
**Burke 10"
Bench Drill
Motor Driven**

*Extremely accurate,
very sensitive and of
Burke Quality.
Has double flanged
top cone mounted
on large bearing
through which
spindle runs. Spin-
dle thrust taken on
a ball bearing.*

*Worth more than
it costs. Write for
full information*

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio

Send Samples



**or Drawings
of your Tapping
Jobs and let
us give you
Production
Estimate**

Burke Friction Driven Tapping Machines eliminate all shock to the tap, and for this reason stop 95% of your tap breakage.

Look into your scrap bin and figure up your losses in broken taps and imperfectly tapped work and see what you can save by installing Burke Equipment.

The Burke Machine Tool Co.
297 East 16th St., Conneaut, Ohio

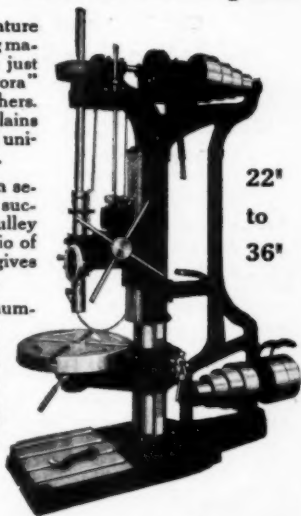
—power at the drill point

That's the vital feature about *any* drilling machine, and that's just where the "Aurora" outranks all others. And that also explains its big output and universal popularity.

One of the "open secrets" of its great success is the large pulley diameter and ratio of gearing, which gives it that extra pep.

There are also a number of special features—the cost-reducing kind—that are especially interesting during these days of necessary readjustment.

For extraordinary drill value consult our Catalog today



DRILLING TESTS OF 24" AND 26" DRILL

Size of Hole	Spindle Speed	Feed per Minute	MATERIAL
1"	360	9½"	Cast Iron
1"	360	6½"	Mild Steel
1½"	350	6½"	Mild Steel
1½"	350	9"	Cast Iron
1½"	225	5½"	Mild Steel
2"	225	6½"	Cast Iron

The Aurora Tool Works
Aurora, Indiana, U. S. A.

“MICRO-SET” HAND Expansion Spiral Reamers

**Cut Fast and Smooth
Will Reduce Your Reaming Costs**



Micrometer Expansion Large Range of Expansion

Unsurpassed for reaming Standard or Over-sized holes.
The reamer for production work. Also made with straight
flutes and in all sizes.

Descriptive circular and price-list upon application

The Schellenbach-Hunt Tool Co.
116-124 Opera Place, Cincinnati, Ohio

F. E. TIGHE SALES CO.
3963 Montgomery Ave.
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AGENTS
HAYDEN SUPPLY CO.
1211 St. Clair Ave.
Cleveland, O.

H. E. BARTON TOOL CO.
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Chicago, Ill.

ARMSTRONG Complete Line of RATCHET DRILLS



*Packer, for rough service; Standard, for
general use; Weston, extra heavy; Univer-
sal and Short Ratchet.*

*Write
for
our
Ratchet
Drill
Catalog*

The Armstrong Universal

The “Universal”, shown above, may be used in awkward corners
and confined spaces where other Ratchets are useless. Often
pays for itself on a single job. Simplest, strongest, fastest.



Armstrong Bros. Tool Co.

“The Tool Holder People”

308 N. Francisco Ave., Chicago, U. S. A.

Are You Using
THE
Jacobs Super Chuck



The Ball Bearings between the Nut and the Body eliminate friction—resulting in greater gripping power and greater ease and speed in operation.

The Super Chuck centers a drill accurately and will continue to do so after years of use.

Write for Descriptive Circular H18

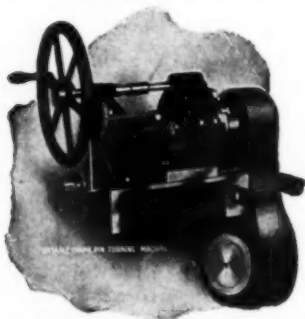
The Jacobs Manufacturing Co.

2074 Park Road

Hartford, Connecticut

It Always Pays Big—

To Use Underwood's Portable Tools



THIS CRANK PIN TURNER AND REBORER is as accurate as any shop tool, and does the work in place. It is worth many times its cost as a time saver alone, to say nothing of its unusual efficiency and accuracy. Especially good in overcoming the difficulties of returning large crank pins.

The work is in plain view of the operator. Four set screws center it true with the pin in the same manner as a lathe chuck. The cutting tools are carried in a patent holder that grips them firmly, and the feed is reversible while machine is running. Made in four sizes. We also build:

Millers; circular planer tools; radius planers; rotary planers; machines for truing eccentrics, facing domes, arms for facing cylinder flanges; rotary flue cleaners; pipe benders; locomotive cylinder borers; boring bars for lathe work; crank pin turners and reflex water glass grinders. We build special machines to order.

*Your superintendent will find our Catalog interesting
And you will find the use of our portable tools profitable*

H. B. Underwood Corporation

1015-25 Hamilton St., Philadelphia, Pa.

Second-Hand Machinery

Lists of Second-Hand Machinery, either for sale or wanted, set in uniform style, will be published under this heading at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted in this department.

Write directly to those offering the machines for sale for prices and full descriptions. If what you seek is not listed, use the blank enclosed to make known your wants to the publisher, who will pass them along to all Machine Tool List advertisers.

FOR SALE BY

The Acklin Stamping Company, - - - **Toledo, Ohio**

SCREW THREADERS.

Two Waterbury Farrel Standard Screw Threaders No. 30, one never set up and one slightly used.

FOR SALE BY

Lucas & Son, Inc., - - - **Bridgeport, Conn.**

VERTICAL HEADS.

Vertical heads, practically new, suitable for No. 1½ or No. 2 Brown & Sharpe miller. Price, each.....\$ 100.

FOR SALE BY

Cincinnati Machinery Supply Co., 1322 Central Ave., Cincinnati, O.

Cylinder grinder, No. 60 Heald, serial No. 1105, perfect cond., price... \$1150.

J. & L. 2"x24", geared head, fine condition, price..... 300.

Pipe machine, power, 4" Jarecki, price..... 275.

FOR SALE BY

H & H Machine Co., - - - **4274 Easton Ave., St. Louis, Mo.**

Grinder, No. 2 Cincinnati, plain.

Planer, Lodge & Davis 24"x24"x6' bed.

Turret lathes, 16"x8' bed Fulton, heavy duty, (2).

FOR SALE BY

Box 28 Care of A. H. Hitchcock, 1235 Caxton Bldg., Chicago, Ill.

MACHINE SHOP.

First-class machine shop, blacksmith shop, brass and iron foundry, in good location; best equipped shop between Memphis and St. Louis.

FOR SALE BY

Botwink Brothers, - - - **21 Sylvan Ave., New Haven, Conn.**

Grinder, Landis No. 4 cylindrical, complete, price.....\$ 1100.

Lathes, Hendey, q. c. geared, yoke head, taper attachment, etc., each.. 500.

Miller, Brown & Sharpe No. 1 universal..... 500.

Planers, Rowland 20"x20"x5', single head, metal working, each..... 200.

Shapers, Stockbridge 16" crank, complete, brand new, each..... 550.

FOR SALE BY

Scott-Bansbach Machinery Co., 130-132 S. Clinton St., Chicago

Punch, sgl. end, 30" L. & A., 14" thru 1", mtr. dr. with 10 h. p., 220 v., a. c. mtr.

Automatic, 4-spindle 14" Gridley. Drill, No. 310 Baker hvy. duty, 3" cap.

Boring mill, 72" Cincinnati, 2 swivel. Grinder, No. 2 B. & S. surface.

heads, motor drive. Grinder, univ., 10x32 Landis No. 14.

Boring mill, 36" geared hd., adjust- Miller, No. 14 Rockford, plain.

able rail, single turret head. Planer, 38"x38"x10' Gray, 1 head.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company, 111 Broadway, New York

Located at our various factories

LATHES.

- | | |
|---|--|
| 9"x18" taper, Porter-Cable. | 36"x20' Pond, 220 volts, d. c. motor. |
| 14" & 16" x8' Whitcomb, q. c. | 36"x20' Bement, t. g. |
| 17"x 6' & 8' LeBlond, geared heads. | 42"x17' Pond, t. g., 220 v., d. c. mtr. |
| 20"x10' LeBlond, q. c. | 42"x20' Niles, t. g. |
| 24"x24' Niles. | 48"x24' Pond, geared hd., 220 volts, |
| 26"x10' Pond, 220 volt, d. c. motor. | d. c. motor. |
| 28"x12' Pond. | 48"x30' Niles, t. g. |
| 28"x18' Niles, taper. | 50"x17' Miles, old style. |
| 32"x17' Pond, t. g. | 54"x28' American, t. g., 220 volt, d. c. |
| 36"x12' Pond, t. g., 220 v., d. c. mtr. | motor. |
| 36"x17' Pond, taper, 220 v., d. c. mtr. | 63"x40' Bement, t. g. |

TURRET LATHES.

- | | |
|------------------------------------|--|
| 1", 2", 24" and 3" P. & W. | No. 6-A P. & J., 220 volts, d. c. motor. |
| 14" Southworth pl. hd. screw mche. | 21" and 28" Pond rigid turrets. |
| 2"x24" W. & S. hollow hex. | 24", 28", & 34" Gisholts. |
| 2"x24" Jones & L., cone hd., old. | 32" Conradson-American turret. |

PLANERS AND SHAPERS.

- | | |
|-------------------------------------|---|
| 20" G. & E. shaper. | 42"x42"x28' Pond, reversing motor. |
| 20" Stockbridge shaper. | 48"x48"x16' Pond, reversing motor. |
| 20"x20"x 6' Bement. | 48"x48"x20' Bement, belt. |
| 24"x24"x 6' Powell. | 54"x36"x10' Bement, belt. |
| 24"x24"x 6', 8' and 10' Whitcomb-B. | 50"x36"x22' Pond, reversing motor. |
| 26"x26"x 6' Gray. | 54"x54"x12' to 22' Pond, rev motors. |
| 30"x30"x 6' & 10' Pond, 2 heads. | 60"x60"x14' to 24' Niles, belt. |
| 30"x30"x 6' to 12' Pond, reversing | 72"x72"x12' Bement, belt. |
| motors. | 72"x60"x14' Bement, reversing mtr. |
| 36"x36"x10' to 16' Niles. | 72"x72"x20' Ridgway, forge, revers- |
| 36"x36"x12' to 16' Pond, reversing | ing motor. |
| motors. | 76"x76"x26' Pond, reversing motor. |
| 36"x36"x24' Bement. | 10"x10' x36' Betts, 220 volt, d. c. motor |
| 42"x42"x14' Bement. | through belts. |

MILLERS AND GEAR CUTTERS.

- | | |
|---------------------------------------|---------------------------------------|
| No. 2-A Brown & Sharpe universal. | 15" Gleason bevel gear generator. |
| No. 2-B single pulley pl., B. & S. | No. 5 vertical, cone pulley, B. & S. |
| No. 4 plain, cone pulley, LeBlond. | 16" Cincinnati gear hobber (new). |
| No. 4 plain, cone pulley, B. & S. | 36" to 60" B. & S. spur gear cutters. |
| No. 5 plain, cone pulley, B. & S. | No. 3-36" Newark, 220 v., d. c. mtr. |
| 6x48 to 132" P. & W. old style thread | No. 4-48" Newark, 220 v., d. c. mtr. |
| millers. | No. 55-36" Newark heavy pinion, |
| 14" No. 5-A Lees-Bradner gear | 220 volt, d. c. motor. |
| generator. | |

DRILLING MACHINES.

- | | |
|-------------------------------------|-------------------------------------|
| 1-spindle Pierle, b. b. | 5' Ridgway, 220 volt, d. c. motor. |
| 32" Aurora, tapping attachment. | 6' Pond, 220 volt, d. c. motor. |
| 40" Aurora, tapping attachment. | 6' Niles full universal, speed box. |
| 4' Bickford speed box radial. | 12-spindle No. 13 P. & W. multiple. |
| 5' Niles full universal, speed box. | |

GRINDERS.

- | | |
|-------------------------------------|---------------------------------------|
| Mummert-Dixon port. radial grinder, | 12"x26" Cincinnati, plain. |
| 220 volt, d. c. motor. | No. 11 B. & S. internal. |
| 18" Gorton disc grinder. | P. & W. old style vertical. |
| 8"x20" Fraser universal. | 18x6 Reid surface No. 2. |
| No. 3 B. & S. universal. | P. & W. thread miller cutter grinder. |

BORING MACHINES.

- | | |
|-------------------------------------|---|
| 36"—44" Niles side head mill. | 10"—16" Niles 220 volt, d. c. motor. |
| 51" Niles mill, with turret head. | 24" and 3" Lucas horizontal. |
| 60" Bement b. & t. mill. | 48", 5 and 64" Niles floor borers. |
| 72" Ridgway, 220 volt, d. c. motor. | 24" to 48" horizontal boring and drill- |
| 10' Niles, 220 volt, d. c. motor. | ing machines. |

SECOND-HAND MACHINERY

Niles-Bement-Pond Co.,—Continued

MISCELLANEOUS.

Air compressors, 324' and 835', steam drive.
Blow fans, No. 10 Sturtevant and No. 70 Buffalo.
Crane, 3-ton, 19' span, Niles 3-motor, 220 volt, d. c.
Crane, 20-ton, 48' span, Sellers, 220 volt, d. c.
Engines, 125, 150 and 200 h. p. Philadelphia Corliss.
Generator set, 100 k. w., 22 volt, d. c., direct connected to engine.
Hammer, 800 lbs. Bement, bd. drop.

Hammer, 80 lbs. Bradley, cushion helve.
Heater, 600 h.p. Cochrane, fd. water.
Hot blast apparatus, 72' fan, steam engine drive.
Pumps, 200 to 500 gal., steam drive.
Saw, 6x6 Racine, 220 volt, d. c.
Saw, No. 16 Higley, 8" capacity.
Saw, 5" Nutter-Barnes.
Saw, 7" capacity, Espen-Lucas.
Slotter, 6" Bement.
Slotter, 18" Putnam, 220 volt, d. c. motor.

FOR SALE BY

A. D. White Machinery Co., - 108-114 N. Jefferson St., Chicago

ENGINE LATHES.

14"x 6' Smurr & Kamen.
18"x 7' Chard, d. b. g., p. c.
18"x 9' Bell, d. b. g., p. c.
20"x 8' Hamilton, d. b. g., s. q. c.
20"x 8' Lodge & Shipley, grd. hd.
20"x 8' Reed, s. b. g., p. c.

20"x 8' Reed, motor driven.
22"x10' Davis, d. b. g., q. c.
32"x10' Pond, s. b. g., p. c.
34"x10' Putnam, s. p. g., p. c.
38"x14' Fifield, s. b. g., p. c.

MILLING MACHINES.

No. 0 Rockford, plain.
No. 25 Becker, horizontal.

No. 1 Newton slab.
Type "A" Briggs (2).

DRILL PRESSES.

20" Mechanics, friction.
26" Barnes, sliding head.
28" Barnes, sliding head.
36" Aurora, sliding head.

2 spindle Guarantee, h. s., b. b.
4 spindle Reed sensitive, 1/2" cap.
24" No. 24 Foote-Burt heavy duty.
2 spindle 24" Barnes, all grd. gang.

PUNCH PRESSES.

No. 0 American Can.
No. 8 & No. 11 Bliss auto. button presses.

No. 4 Rockford, o. b. i. (3).
New Swaine o. b. i. presses Nos. 27, 29, 31, 33, 35 and 37.

TURRET LATHES AND SCREW MACHINES.

No. 3 Foster, plain head.
20"x5' Bridgeport, (2).
20"x8' Fay & Scott universal.
22"x5' Reed.
21" and 24" Gisholts.
3x36" Jones & Lamson.
11"x10" Milholland.
1" Biggs (2).
No. 1 Garvin, hand, (4).
No. 1 B. & S. auto. 1/2" (2).

No. 3 Stecher, hand, (4).
16"x5' Drees Fox.
18"x6' American Fox.
18"x6' Springfield Fox.
7/16" Cleveland, ratchet feed.
1" Cleveland, semi-auto.
1" Cleveland, friction.
1" Cleveland, jigger.
1" Hartford, (2).
1" Cleveland, jigger.

BOLT CUTTERS AND PIPE MACHINES.

14" Acme, double head.
3" Acme single head, (2).
4" Acme single head.

4" Saunders (2).
8" Eaton, Cole & Burnham.

MISCELLANEOUS.

Blower, No. 7 Sturtevant, high press.
Boring mch., 24" bar, Binsse horiz.
Gang splitter, takes 21" sheets.
Gang splitter, takes 25" sheet.
Gas engine, 35 h. p. Columbus.
Grinders, No. 2 Woods tool & cutter.
Grinder, No. 2 Oesterlein tool & cut.
Grinder, 12x32 Landis plain.
Grinder, Springfield. 2-wheel wet.

Grinder, Leland & F., wet.
Keyseater, No. 2 Mitts & Merrill.
Planer, 30"x30"x10' Pond, 1 head.
Profiler, 2 spindle Putnam.
Riveter, 1/2" Shuster.
Saw, No. 5 1/2 Nutter-Barnes.
Screw slotter, Garvin hor. 3/16 to 1/4".
Tapper, No. 2 Garvin, auto.

SECOND-HAND MACHINERY

FOR SALE BY

Jones Machine Tool Co.,

435 E. Pearl St., Cincinnati, Ohio

ENGINE LATHES.

- | | |
|------------------------------|------------------------------|
| 14"x 6" Bradford, q. c. | 22"x12" United States, q. c. |
| 16"x 8" Bradford, q. c. | 24"x12" LeBlond, q. c. |
| 18"x 8" Walcott, q. c. | 24"x16" Prentice, l. c. |
| 20"x 8" Boye & Emmes, q. c. | 36"x24" American, q. c. |
| 20"x10" United States, q. c. | 42"x18" New Haven, l. c. |

DRILL PRESSES.

- | | |
|----------------------------------|------------------------------------|
| 22" Prentice, p. f. | 24" Prentice, s. h., taper attach. |
| 24" Aurora, b. g., s. h. | 24" Weigel, all gear drive. |
| 24" Aurora, s. h., taper attach. | 28" Superior, s. h., b. g. |

SHAPERS.

- | | |
|--------------------------|--------------------|
| 14" Steptoe crank. | 18" Barker crank. |
| 15" Juengst crank. | 20" Steptoe crank. |
| 16" Smith & Mills crank. | 24" Steptoe crank. |

MILLING MACHINES.

- | | |
|-----------------------------------|--------------------------------------|
| No. 1 Toledo hand miller. | No. 3 Milwaukee, plain, s. p. drive. |
| No. 1 1/2 B. & S. universal. | No. 4 Cincinnati, plain. |
| No. 3 B. & S. plain, s. p. drive. | No. 1 1/2 Knight vertical miller. |

MISCELLANEOUS.

- | | |
|--|--------------------------------------|
| Automatics, Cleveland, 2 1/2" cap. | Press, rack & pinion, No. 857 Toledo |
| Bolt cutter, 1 1/2" Acme, single head. | Presses, P-2 & P-3 Ferracute, No. 5 |
| Die filer, P-4 Oliver. | Toledo, No. 7 1/2 Bliss. |
| Gear cutters, 26" & 36" B. & S. | Punch, No. 6 Beatty, 48" throat. |
| Gear hobbors, 12" Barber-Colman. | Square shear, 97" Toledo, 10 gauge. |
| Grinder, No. 60 Heald. | Square shear, 96" foot power, 20 ga. |
| Hammers, board drop, 800 to 2000 lb. | Turret lathes. |
| Planers, 24", 36" & 48". | |

Let us know your wants. We can supply you.

FOR SALE BY

Frank Toomey, Inc.,

127-131 N. Third St., Philadelphia, Pa.

Machine Tools.

LATHES.

- | | |
|---|---|
| 42" Pond car wheel, motor dr., used. | 16"x8" Sidney, d. b. g., q. c., new. |
| 36"x16" Sidney, d. b. g., q. c., new. | 14"x8" Carroil, q. c., new. |
| 21"x10" LeBlond, d. b. g., q. c., used. | 13"x 5' 6" Carroll, s. b. g., p. c., new. |
| 17" & 15" Sidney, d. b. g., q. c., new. | 9"x36" Johnson, bench, new. |

SHAPERS AND PLANERS.

- | | |
|-------------------------------------|-----------------------------------|
| 7" Rhodes shaper, new. | 36"x36"x10" Cincinnati planer, 3 |
| 16", 20", 24" Steptoe shapers, new. | heads, motor, used. |
| 20" Cincinnati b. g., used shaper. | 30"x30"x8" Whitcomb, 1 hd., used. |
| 36"x36"x14" Ohio planer, 4 heads, | 24"x24"x8" Hendey planer, 1 head. |
| belt driven, used. | 24"x24"x6" Pease planer, 1 head. |

MILLERS.

- | | |
|-----------------------------------|-----------------------------------|
| No. 12 Brown & S. profiler, used. | No. 2 Brown & Sharpe vert., used. |
| No. 4 Brown & Sharpe plain, used. | No. 1 Dow plain, new. |

DRILLING MACHINES.

- | | |
|---|---|
| 36" Hamilton pl. rad., cone dr., used. | 25" Superior, comp. table, used. |
| 36" Aurora, b. g., p. f., used. | 24" Prentice, sliding hd., b. g., used. |
| 28" Superior, s. h., b. g., p. f., new. | 20" Excelsior and Champion, b. g. |
| 32" Superior, b. g., p. f., new. | 4 spdl. Superior hi-speed, used. |

MISCELLANEOUS.

- | | |
|--|--|
| Automatics, Acme No. 53 mult., used. | Pipe machines, 2", 4", 6" Oster, new. |
| Bolt cutters, Landis 4", used. | Presses, large stock, used. |
| Boring mill, 42" Bullard, vert., used. | Punch & s., Buffalo "Iron Worker". |
| Grinder, 16"x36" Norton, pl., used. | Slotter, 10"-12" Dill, used. |
| Grinder, 8x30" Modern plain, used. | Turret, Gisholt 21" |
| Grinder, No. 1 Fraser univ., new. | Turret, Bardons & O. Nos. 1 & 6, w. f. |
| Keyseaters, Nos. 2 & 4 Catlin, used. | Turret, Gridley 4-spindle, 2 1/2" |

SECOND-HAND MACHINERY

FOR SALE BY

Russell Machine Co., - 28th St. & A. V. R. R., Pittsburgh, Pa.

LATHES,

60"x28' Gleason, triple geared.
48"x32' N. B. P., triple geared.
48"x28' Niles, c. r.
48"x28' Pond, triple geared.
26"x12' Pittsburgh, dbl. b. g.
26"x20' 6" Putnam, b. g., c. r.
26"x10' 6" Walcott, q. c. g.
24"x16' 6" Johnson lathe.
24"x11' Reed, c. r.
19"x10' LeBlond, motor drive.
19"x 6' Bullard, c. r., b. g.
18"x 8' Sidney, q. c. g., d. b. g.
16"x 6' Blaisdell, h. s.
16"x 6' Fosdick, q. c. g.
16"x 6' Columbus, q. c. g., new.
15"x 8' Schellenbach, d. b. g., h. s.
14"x 6' Lodge-Shipley, q. c. g.
11"x 5' Barnes, h. s.
3"x36" J. & L. turret.
24"x 6' Gisholt turret, 64" h. s.
24"x 6' Gisholt tur., 64" h.s., m.d.
10"x 4' Blount speed lathe.
14"x 5' American speed lathe.
18"x7 1/2' Wood lathe.

PLANERS AND SHAPERS.

24"x24"x8 Chandler planer, 1 head.
48"x48"x22' Pond planer, 4 heads.
72"x56"x12' Betts planer, 2 heads.
14" G. & E. sgl. grd. shaper.
16" G. & E. single geared shaper.
20" Stockbridge, b. g. shaper.

DRILLS AND BORING MILLS.

20" Barnes "camel back".
20" Champion, new, pl. w. & l.
20" Silver, new, b. g., p. f.
30" Gould-Eberhardt, b. g., upright.
30" Prentice and 36" Snyder, b. g.
40" New Haven, b. g. drill.
3', 4' & 7' Prentice radial drills.
6', 6 1/2' & 8' Pond radial drills.
3' Fosdick, 9' Baush radial drills.
Burke Nos. 0 & 1 sensitive drills.
Champion post drills, 1/2' & 1".
30" Bullard and W. & S. bor. mills.
36" Bridgeport boring mill.
42" Bullard rapid production.
42" & 50" Bullard bor. m., 2 heads.
62" Colburn boring mill.
72" Pond boring mill, 2 heads.
90" Niles boring mill, 2 heads.
7' & 10/16' Betts, 2 heads.
10" Pond boring mill, 2 heads.
10' Niles boring mill, 2 heads.

PUNCHES, SHEARS, PRESSES AND ROLLS.

L. & A. size C. multiple punch.
50" throat Reade sgl. end punch and shear; massive construction.
Cleveland punch & shear, 19" throat.
No. 6 L. & A., 24" throat.
No. 45 Buffalo punch, 1/2"x1".
No. 4 Doelger & Kirsten alligator shear, cap. 4 1/2" round soft steel.
Garrison m. d. alligator shear, 15" knife, cap. 3" square, 36000 lbs.
Niagara plate shear, 97"x1 1/2".
Morgan plate shear, 96"x1 1/2" thick.
Garrison plate shear, cap. 3"x81" m.d.
Waterbury-Farrel rotary sh., 14" thr.
Mesta plate shear, cap. 1"x156".
Carlin alligator shears, 24" cap.
Lewis alligator shears, 24" & 3 1/2" sq.
Niagara pr. sq. shears., 36"x72"x96".
500 ton steam hydraulic press.
300 ton horiz. hyd. wheel press.
No. 56 dbl. housing knuckle press.
Stiles No. 3 inclinable press.
Bliss No. 18 & No. 19 o. b. i. presses.
Bliss No. 76 1/2 s. s., d. g. press, 8" str.
Corry Mch. Co. press, 12" stroke.
Straight-side punch press, 1/2" str.
Ferracute foot presses.

MISCELLANEOUS.

Air compressor, No. 0 Au-To 3"x4".
Air compressor, 6"x6" hor., b. d.
Air compressor, 8"x6" hor. b. d.
Air compressors, Bury 10x10.
Hand saw, Kane-Roach 30".
Blower, Sturtevant, No. 4, volume.
Blowers, Buffalo No. 7-8 vol.
Blowers, Root No. 5 rotary.
Bolt cutter, Landis 1 1/2".
Brazing table, all iron, 17"x29 1/2"x31".
Bulldozers, Nos. 4 & 6 Williams-W.
Cold saw, Wagner, size 18 type 3.
Corner treader, American No. 65.
Crane, 10" 1-beam, 12' 3" span.
Cranes, portable 2 & 2 1/2 ton.
Engine, gas, 15 h. p. Fenner.
Forge, No. 41 Champion new.
Grinder, Greenfield cutter & tool.
Grinder, Diamond No. 3 wet tool.
Grinders, Plymouth Nos. 13, 14, 17.
Hammers: 1500 lb. Bement steam drop; 2500 lb. Chambersburg dbl. leg; 2000 lb. B. M. sgl. leg steam forg.
Hammers, 80 & 100 lb. Bradley.
Hoist, contractor's steam, with 8 h. p. boiler & 5 h. p. engine.
Millers, pl., Garvin No. 12, Cinti. No. 3.
Paper cutter, Golding 36".
Pipe machines, 3", 4", 8".
Polishing stand, d. end, 42"x1 1/2" arbor.
Polishing stand, Cuyahoga dbl. end.
Ripsaw, table, 49"x30".
Roll lathe, United Engr. 26"x18".
Saw, West Haven, hack, 6"x6".
Saw, Economy No. 7, hack.
Slotter, Niles 15".
Straightening rolls, 84x10 Cleveland.
Wiring machines, Pexto, bench.

SECOND-HAND MACHINERY

FOR SALE BY

Brown Machinery Co.,

Boring mill, 60" Sellers, 2 heads.
Drill, 30" Gould & Eberhardt.
Drill, 30" Prentice.
Drill, 24" Sibley & Ware.
Drill, 26-spindle Baush.
Drills, 4, 5 & 6 spindle Allen.
Drill, radial, 3' American.
Drills, Nos. 1 & 3 Barnes hor. radial.
Gear cutter, 30" Whiton.
Grinder, aerial, Cincinnati.
Grinder, surface, 1 LaSalle.
Grinder, 14" Besly.
Grinder, No. 2 Oesterlein univ.
Grinder, Woods No. 2 univ.
Grinder, drill, W. & M. B. Pt.
Hammer, 1200 lb. Chambersburg,
double frame steam.
Hammer, 800 lb. Lane, double frame
steam.
Lathes, 14", 16", 20", 26" Walcott,
d. b. g., q. c. g.
Lathe, 16"x 6' Sidney, q. c. g.
Lathe, 24"x 10' Fay & Scott.
Lathe, 26"x 12' 10" Wickes, d. b. g.,
q. c. g., taper attachment.
Miller, 3-B Owen, vert. attachment.
Miller, 1-B Fox horizontal.

2323 N. 9th St., St. Louis, Mo.

Miller, No. 4 Hendey, b. g.
Miller, No. 7-H Becker.
Miller, No. 2 American Lincoln.
Motors, 10, 40, 50 h. p., G. E.
Planer, 24"x 24"x 6' Lodge & Davis.
Planer, 26"x 26"x 6' Pond.
Presses, Swaine Nos. 57 & 35.
Press, No. 5 Bliss Stiles.
Profilers, two-spindle, Pratt &
Whitney, Putnam, Reed-Prentice.
Punch, No. 20 Excelsior, cap. 1/2".
Riveter, air, P-A.
Roll, plate straightening, No. 0
Hilles & Jones.
Screw machine, hand, Smith.
Shaper, 16" Whipp, s. g.
Shaper, 17" Smith & Mills, s. g.
Shears, 134 Marshalltown, 1/2".
Shear, No. 31 Exc. alligator.
Shear, 62" Peerless, 14 ga.
Shear, 52" Niagara, ft. sq.
Shear, 37" Bertsch, foot gap.
Stake riveter & punch, No. 3 Hilles
& Jones, 5' throat.
Turret lathe, 24" Wysong & Miles.
Turret lathe, 16" Gisholt.
Turret lathe, No. 3 Wood.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1001-3-5 N. Sixth St.,

St. Louis, Mo.

LATHES.

11"x 4' Shepard.
13"x 8' Barnes.
18"x 10' R. & L., q. c. g.
20"x 9' Davis.
25"x 18' Niles.

24" Gisholt.
26"x 18' Springfield, motor-drive.
33"x 20' Draper.
36"x 16' Fitchburg.
54"x 16' Putnam.

SHAPERS.

Smith & Mills, all sizes.
16" Whipp.
30" Kelley.

24" Gould & Eberhardt.
36" Cincinnati, 8' traveling head.

DRILLING MACHINES.

Barnes, all sizes.
24" Aurora.

40" Aurora.
Pawling & Harnischfeger horiz.

MILLERS.

No. 11 Brown & Sharpe plain.
No. 12 Kempsmith plain.
No. 3 Kempsmith universal.
No. 3 Becker plain.

No. 4 LeBlond plain.
No. 5 Cincinnati.
No. 2 Rockford universal.
Owen duplex.

MISCELLANEOUS.

Bolt cutter, 1 1/2" Acme.
Bulldozer, 75-ton Lourie.
Grinder, 5"x 18" Ott.
Grinder, 8"x 30" Modern.
Grinder, No. 1 Brown & Sharpe.
Grinder, 8"x 18" Ott.
Hammer, 1000 lb., steam.
Marking machine, Mathews.
Motors: 5, 10, 15, 20 & 50 h. p., d. c.
Motors: 5, 10, 15, 20 & 30 h. p., 3
phase, 60 cycle.

Saw, No. 12 Higley.
Saw, No. 2 Bryant.
Screw machine, 1 1/2" Foster.
Screw machine, No. 1 Wood Turret.
Screw machine, No. 2 Wood Turret.
Screw machine, No. 3 Wood Turret.
Slotter, 36" Niles.
Slotter, 48" Betts.
Steam pumps, Union.
Tapper, No. 2 Garvin.

SECOND-HAND MACHINERY

FOR SALE BY

The Reeve-Frith Company,

37 So. Desplaines St., Chicago, Ill.

Drill, 20" Hofer, b. g.
Drill, 24" Gang radial, motor drive.
Drill, 24" Hofer, b. g., p. f., t. a.
Grinder, No. 1 LaSalle, tool & surf.
Grinder, No. 1 Cincinnati, univ.
Lathe, 11"x 4" Wells, speed.
Lathe, 12"x 5" Davis, with taper att.
Lathe, 14"x 6" Rockford, q. c. feeds.
Lathe, 18"x 8" Rockford, q. c. feeds.
Miller, No. 6 Bristol, hand.

Miller, No. 1¹/₂ Standard, p. f. and spline attach.
Press, No. 20 Bliss, o. b. i.
Press, No. 3 Cady, solid back.
Press, No. 4¹/₂-E American Can. Arch.
Screw mch., No. 1 W. & S., 1" cap.
Screw machine, No. 1 Wells, 1" cap.
Shaper, 12" Smith & Mills, crank.
Shaper, 16" Stockbridge, crank.

FOR SALE BY

Herman L. Winterer,

943-53 N. Front St., Philadelphia, Pa.

LATHES.

43"x17" 4¹/₂" Bement-Miles.
42"x16" Niles taper att.
37"x14" Johnson d. b. g., q. c. f., t. a.
32"x12" Pittsburgh, heavy duty, q. c. g.
26"x16" 6" American, q. c. g.
27"x12" Bullard.
26"x11" Wickes, q. c. g.
28"x10" Niles, q. c. g.
25"x14" Hendey, q. c. g., taper attachment, oil pan, (2).
24"x14" Porter.

21¹/₂"x9" LeBlond.
20"x8" 6" Walcott, d. b. g., q. c. g., (2).
20"x 8" Whitcomb Blaisdell, q. c. g.
20"x10" 6" American pat. hd., q. c. g.
18"x 8" Prentice, q. c. g.
19"x10" Draper, patent head.
18" x 7" Chard, d. b. g., semi q. c. g.
18"x6" to 8" lathes, (6).
16" Lathes, (10).
14" Lathes, (19).
And many others.

TURRET LATHES.

3¹/₂x28" Pond, triangle.
3x26" Pratt & Whitney, hollow hex.
20x7" 6" Pratt & Whitney, back grd.
19"x7" Fay & Scott, back grd.
19"x6" American ext. gap, bk. grd.
No. 22¹/₂ Garvin Monitor.

17"x6" Warner & S., bk. grd., (2).
16"x6" Johnson, back grd.
No. 5 Bardons & Oliver, back grd.
No. 3 Bardons & Oliver back grd.
14¹/₂"x5" 3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

DRILL PRESSES.

40" Barnes horizontal radials, (2).
36" Bickford radial, circular base, motor driven.
14" 6-spindle Allen sensitive.
14" 4-spindle Allen sensitive.

36" b. g., sliding head drill.
26" Hofer, tapping attachment.
20" Champion, new, (6).
Plain drills, all sizes.
Drill presses, assorted sizes.

MILLING MACHINES.

38"x6" Ingersoll horizontal slab.
No. 5 Cincinnati, table 9¹/₂x50¹/₂".
No. 15 Garvin, table 12x42".
No. 3 Becker Bramard, table 12x40".
No. 3 Hendey-Norton, q. c. g.
No. 6Y Brown & Sharpe plain, (2).

No. 2B heavy, Brown & Sharpe, single belt drive, q. c. g.
Whitney hand miller.
No. 27 Industrial Works, Lincoln type, table, 7x27".
Gooley & Edlund, 7¹/₂x46" table.

PLANERS AND SHAPERS.

49"x48"x16" Pond planer, 3 heads.
30"x30"x8" Putnam planer.
26¹/₂"x26"x 6" Hendey planer.
49" Morton draw-cut shaper.

39" Pedrick & Ayer, open side.
26" Cincinnati.
16" Gould & Eberhardt shaper.
14" Warren shaper.

MISCELLANEOUS.

Boring mill, 100" Sellers, vert. dbl. hd.
Boring mill, car wheel, 60" Newton.
Boring, drilling and milling machine, 17¹/₂" Bement Niles horizontal.
Grinder, 13¹/₂"x5" Landis universal.
Grinder, disc, No. 17 Besly.
Grinder, disc, No. 1 Besly.
Hammer, 200 lb. Beaudry Champion.

Hammers, 60 lb. Bellefonte upright; 2.
Keyseaters, 18" stroke Morton, (2).
Keyseater, Mitts & Merrill No. 5.
Punch presses, all sizes, (55).
Punch & shear, Industrial Wks. d.e., capacity 4" in 1" squaring 4"x6".
Slotter, Newton, 18"; cir. table.
Slotter, Bement 10"; cir. table.
Tooth round g mch., Schuchardt & S.

Large assortment of General Machinery. Send for Complete List.

SECOND-HAND MACHINERY

FOR SALE BY

Badger-Packard Mchry. Co., 133-9 W. Water St., Milwaukee, Wis.

Boring mill, 34" Colburn.
Brake No. 135-36" Chicago, power,
3/16" capacity.
Compressor, 12x12 Gardner, b. d.
Gear hobber, Adams.
Miller, No. 3 Becker-Brainard, vert.
Miller, No. 7-H Becker, Lincoln type.

Planer, 24"x24"x16' Fitchburg.
Planer, 36"x36"x9' Lodge & Davis.
Press, No. 3-PG Ferracute geared.
Slotter, 21" stroke Pratt & Whitney.
Turret lathes, No. 6 Warner &
Swasey, 5 1/2"x10" model "A" Potter
& Johnston.

Large stock of other equipment; send us your inquiries.

FOR SALE BY

The H. A. Smith Mchy. Co., 501 E. Water St., Syracuse, N. Y.

Air compressor, 10x8 Ingersoll-
Rand, class ERI.
Cold rolled steel:
7 tons 1 15-32x.019
4 tons 3 1/2 x .025
5 tons 3 11-16x .048
Drill, Barnes 20" 4-spdl. gang, auto-
matic approach feed mechanism.
Galvanizing outfit complete, Hanson
& VanWinkle, for small parts.
Gear generators, bevel, 8" Gleason
(2).
Gear generators, bevel, 18" Gleason
(6).
Grinders, plain, No. 11 Brown &
Sharpe, late style (4).
Grinder, face, 8 1/2" Diamond, with 30
h. p. motor.
Grinder, universal tool and cutter,
Norton No. 1.
Lathe, 14"x6" Monarch.
Lathes, 16"x8" Monarch (5).
Lathe, 16"x8" with pan, taper and
collets, Hendey.

Lathe, 16"x8" Walcott.
Miller, pl., No. 2 Kempsmith.
Miller, univ., No. 3 Kearney & T.
Multi automatic, serial number
above 10500.
Pinion blockers, 2-sp. Gould & E.,
serial numbers above 3100 (3).
Pinion blocker, 8-sp. Gould & E.,
serial number above 3300.
Profiler, No. 4 Garvin, pwr. rty. tbl.
Punch press, Rockford No. 316, grd.
Punch presses, No. 2 Rockford inc. (2)
Radial blast sand blast barrel, 36x44
No. 3 Standard.
Screw machine, hand, No. 0 B. & S.
Screw machine, 4-spindle automatic,
2 1/2" National Acme.
Screw mchs., Warner & Swasey No.
4, with air chuck equipment (6).
Shaper, traverse, Hendey, 15" str.
Turret lathes, 3x36 Jones & L. (3).
Turret lathes, univ., 16" Acme, friction
head, chasing bar (2).

FOR SALE BY

The W. M. Pattison Supply Co., Cleveland, Ohio
Main Office, Show Rooms and Warehouse.

Boring mill, No. 1 Cleveland, horizontal, complete.
Drill, Hoefler, 26" sliding head, b. g., p. f.
Drill, 3 1/2' Dreeses plain radial.
Grinding machine, universal, Webster & Perks No. 1, 10"x30".
Grinding machine, universal, Bath No. 1.
Lathe, 14"x6" Bradford, c. r.
Lathe, 14"x6" Rockford, d. b. g., quick change gear and c. r.
Lathe, 16"x8" Flather, q. c. g., d. b. g., with c. r., taper, draw-in attachment
and relieving attachment.
Lathe, 18"x8" Bradford, quick change, d. b. g. and c. r.
Miller, universal, No. 2-B Hendey, complete.
Miller, plain, No. 3-G. H. Hendey, complete.
Miller, vertical, No. 5-C Becker, complete.
Miller, plain, No. 0 Brown & Sharpe, with pump.
Planer, 26"x26"x8" Cleveland open side, two heads.
Shaper, 17" Averbek, b. g., complete.
Shaper, 15" Potter & Johnston, complete.
Shaper, 24" Potter & Johnston tool-room, complete.
Turret lathes, universal, No. 2-B Foster (2).
Turret lathes, universal, No. 1-B Foster (2).

This is a partial list. We have a complete assortment on hand.
Write us and state your requirements. Correspondence solicited.

SECOND-HAND MACHINERY

FOR SALE BY

W. P. Little Co.,

1616 Columbus Road, Cleveland, Ohio

8"x108" Lo Swing.
20"x 8' Rahn & Mayer.

LATHES.

26"x 9' Bridgeford, d. b. g., q. c. g.
30"x10' plain turning.

16" Ohio, b. g. crank.

SHAPERS.

20" Kelly, back geared, crank.

No. 2B Hendey universal.
U. S. hand milling machines (2).

MILLING MACHINES.

No. 1 Brown & Sharpe.
4" P. & W. spline miller.

MISCELLANEOUS.

Blower, No. 8 Sturtevant.
Broach, No. 3-A Lapointe.

Riveter, 1/2" Shuster.
Shear, 42" Niagara, gap squaring.

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12"x 4' Porter-Cable, c. r., q. c. g.,
pan bed, (4).
14"x 6' Hamilton.
13"x 5' Willard, c. r.
14"x 6' Prybil, stud.

15"x 6' Sebastian, c. r., geared hd.
16"x 6' Reed, r. and f.

18"x 6' Blaisdell, p. r. and t. a.
24"x14' Boye & Emmes, c. r., 3-step
cone.

TURRET LATHES AND

SCREW MACHINES.

14" Lodge & Davis, plain head.
24" Davis turret boring and chuck-
ing lathe, with forming rest.
22" Lodge & Shipley heavy duty
turret boring lathe.
14" Acme screw mche. p. f. to tur., (2).
No. 2-A Warner & Swasey g. h.
turret lathes, (2).
No. 3-A Warner & Swasey g. h.
turret lathe.

26" Gisholt heavy duty turret lathe.
16" Warner & Swasey, plain head,
with air chucks (3).
2"x24" Jones & Lamson g. h. flat
turret lathe.

No. 00 Brown & Sharpe auto, (4).
No. 0 Brown & Sharpe auto, (6).
No. 2 Brown & Sharpe auto, (3).
1 to 1/2" Model A Cleveland auto, (2).

MILLING MACHINES.

No. 1 Rockford, hand, p. f.
No. 15 Garvin plain, b. g.
No. 22 Garvin, vertical spindle.
Valley City, pl., with dividing head.

No. 6 Becker, vert., rotating table.
12" Pratt & Whitney, horiz., auto.
No. 13B Brown & Sharpe plain.

GRINDERS.

No. 3 Brown & Sharpe, universal.
No. 1 Detroit Centerless.
No. 10 Cochrane-Bly auto. bench
saw filing machine.
No. 1 Brown & Sharpe, univ., (2).

Type "DE" Hisey-Wolf internal.
Gisholt tool grinder.
No. 14-16 Besly, wet ring wheel.
6"x18" Landis, pl., single pulley dr.
No. 11 B. & S. plain grinders.

HAMMERS.

Coffman post pwr. dr. hammer 25 lbs.

Cady belt drop hammer, 100 lbs.

METAL CUTTING TOOLS

& SQUARING SHEARS.

Excelsior power hack saw.
12" Burke metal cold saw.

Higley cold saw.
No. 154 Higley cold saw.

PUNCH PRESSES.

No. 264 Consolidated, geared, dbl.
action cam drawing.

No. 69-N Bliss, sgl. action cam, grd.
No. 83 Bliss, straight side, geared.

GEAR CUTTERS.

26" No. 3 Brown & Sharpe auto., (3).
60" Eberhardt, spur.

No. 13 Brown & Sharpe auto., (2).

MISCELLANEOUS.

Boring mche., 22" swing, Star horiz.
Boring mill, 34" Colburn.
Brake, 36" P. S. & W. cornice brake,
20 gauge capacity.

Drills, sgl. sp. upright sens. (2).
Fender equip., Yoder, complete.
Planers, 22"x22"x5' Putnam, 1 hd., (3).
Polishing lathes, City Machine Co.

SECOND-HAND MACHINERY

FOR SALE BY

Brownell Machinery Co.,

Boring mill, No. 1 Beaman & Smith.
Boring mill, No. 1 Cleveland.
Drill, 4-spindle Reed-Prentice.
Drill, 5' American univ. radial.
Drill, 26" Henry & W. sens. radial.
Gear shaper, No. 612 Fellows.
Grinder, 20" Diamond wet tool.
Hammer, 40 lb. Bradley cush. helve.
Hammer, 50 lb. Bradley upright hlv.
Lathe, 10"x 4' Reed.
Lathe, 28"x 14' Maine.
Lathe, 30"x 12' Putnam.
Milling mch., No. 6 Whitney hd.
Milling mch., 16" Briggs high duty.
Milling machine, No. 1B Kearney &
Trekker, with vertical, univ. and
slotting attachments.

11-13 Eddy St., Providence, R. I.

Milling mch., No. 2 B. & S. univ.
Pipe machine, No. 304-A Oster.
Planer, 17"x 17"x 4' Whitcomb.
Planer, 22"x 22"x 5' Whitcomb.
Planer, 30"x 30"x 8' Whitcomb.
Planer, 36"x 36"x 13' Betts.
Planer, 72"x 72"x 12' Pond.
Screw machines, No. 60, OG and
No. 2 B. & S. automatics.
Screw machines, 14" Cleveland
Model A automatic.
Screw machine, 24" Davis, chucking.
Swaging machines, No. 2 Standard.
Swaging machine, No. 3½ Langelier.
Wire coiler, No. 2 Standard.
Wire bull block, No. 11 Standard.

FOR SALE BY

The Randle Machinery Co., 1723 Powers Street, Cincinnati, Ohio

ENGINE LATHES.

18"x 8' Lodge & Shipley, q. c. \$ 550.
16"x 6' South Bend, loose chg. 300.
18"x 8' Barker, loose change... 450.
28"x 12' Fay & S., loose chg. \$ 600.
30"x 16' Prentice, loose chg. 800.
36"x 24' American, quick chg. 2250.

PLANERS.

30"x 30"x 14' American, two heads, belt drive \$ 1,500.
36"x 36"x 14' American, two heads, belt drive 1,900.
Pedrick & Ayer open side, planes 30" wide, bed 11' long. 1,000.
60"x 60"x 12' Sellers, widened to 72" four heads. 2,500.

MISCELLANEOUS.

Boring mill, 60" Niles vert. \$1,500.
Boring mill, 19" Niles vert. 4,500.
Boring mill, No. 2 Barret. 24x15 1,600.
Drill press, 45" upright, back
geared, power feed 300.
Grinder, No. 60 Heald cylinder 1,250.
Miller, No. 2½ Rockf'd univ. \$ 800.
Millers, No. 1½ American pl. 775.
Miller, No. 1½ American univ. 1,000.
Radial drill, 6" Bausch-H. pl. 650.
Shaper, 16" Barker, b. g. crank 450.
Shaper, 24" Barker, b. g. crank 625.

Many other bargains. Send us your requirements.

FOR SALE BY

A. M. Steehr Machinery Co., 844-846 North Wells St., Chicago, Ill.

Blue printing and drying machine,
continuous, 42" cap., 220 volt, d. c.
Bolt cutter and taper, ¾" cap.
Boring mill, horizontal, 3" bar.
Drill presses, new, 20", back gear,
power feed, each \$120.
Drill pr., 2-sp. Moline "Hole Hog".
Gear cutter, Belton No. 10.
Gear cutter, 24" Gould & E.
Gear cutter, 60" Gould & E.
Grinder, Heald, piston ring, mag. ck.
Grinder, 3x18 Norton.
Grinder, No. 75 Heald.
Grinder, 12"x 48" Modern.
Grinder, No. 16 Blanchard, 30" ck.
Hammers, 600 lb. Beaudry, & others.
Keyseater, No. 2 Davis.
Lathes, all sizes.
Pipe machine, 6" Jarecki, mtr. dr.
Milling machines, Nos. 1 and 2 uni-
versal, also 15 other sizes plain.
Planers, 26x26x16", two heads.
Planer, 28x28x8' Gray 1 head.
Planer, 30x30x12' Gray, 1 head.
Planer, 30x30x12' Lodge & D. 1 head.
Presses, No. 4 Robinson, Nos. 3A &
4 American Can, Nos. 30 & 45
Crosby, No. PG3 Ferracute.
Punch & shear, No. 13 W. & W. Co.,
38" throat, arct. jaw, 1½" in 1".
Saw, metal band.
Screw machines, No. 1 Pratt &
Whitney, Nos. 52 and 53 Acme
auto., 1½" and 2" Cleveland sgle.
spdl., 2½" Gridley, sgle. spdl.
Shears, bar splitting and square.
Tapping machine, Tuttle, ½" cap.
Tell call signal system.

SECOND-HAND MACHINERY

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

"Machinery is our Middle Name"

Air compressors, 4x4, 6x6, 8x8.
Boring machine, Rockford horiz.
Bulldozer, W. & W. No. 24.
Cold saw, Lea-Simplex No. 18.
Cut-off mchs., Davis 6", H. & R. 4".
Drill presses, all sizes, single and multiple spindle.
Gear hobbors, No. 3 Farwell and Garvin double spindle sprocket.
Gear shaper, 36" Fellows.
Grinders, cylindrical, surface, knife, univ., centerless, emery stands.
Lathes, large stock both new and good used, all sizes.

Keyseaters, LaPointe, Davis No. 2.
Milling machines: Bristol, Brown & S., Becker, Hendey, Kemp Smith, Steptoe, Ohio, plain and universal; Becker s. d. vertical; Briggs B-72".
Planers, 24"x24"x6" Ohio and Am.
Presses, Niagara, Swaine, Ferracute, Bias straight and inclinable.
Rivet spinners, vertical and horiz.
Screw machines, B. & S., P. & W. No. 00, 3 Gridley auto, 4 sp. 24".
Shapers, 16 & 20" Cincinnati b. g., 24" Gould & Eberhardt, 16" Hendey.
Wood-Work'g & Sheet Metal Tools.

FOR SALE BY

Tubor, Velick & Co., Inc., - Lake & Desplaines Sts., Chicago, Ill.

Telephone: Monroe 4199

New and Used Machines.

PUNCH PRESSES.

No. 604 Bliss, (4).
No. 4 Verdin Kappes, b. g.
No. 3 V. & O.
No. 33 Consolidated.

No. 3 Am. Can. dbl action (2).
No. 35 Niagara.
No. 15 Torris Wold.

DRILL PRESSES.

20" Canedy-Otto, (20).
20" Barnes, (20).
30" sliding hd. (3), different makes.
20" to 30" Silver and Rockford (20).
Bench drills, with chucks (25).

1-sp. Leland Gifford, h. s.
6-sp. Leland Gifford, h. s.
3-spindle Hoefler.
4' radial, Niles.
4' radial, Mueller.

MILLING MACHINES.

No. 15 Garvin plain.
No. 3 Cincinnati universal.
No. 9 Kemp Smith.

Fox millers, power feed, (15).
Bristol millers, plain, (15).

LATHES.

Bench lathes, (4).
12"x 5' Davis, (2).
16"x 8' Robinson.
16"x 8' South Bend.
16"x 6' Rahn-Carpenter.
16"x 8' Canedy-Otto.
16"x10' Hamilton.

18"x 8' Bradford.
18"x 8' Sidney.
18"x10' American, (3).
20"x 8' Hamilton, q. c.
20"x14' LeBlond.
22"x18' Wickes.

GRINDERS.

No. 1 Brown & Sharpe universal.
No. 14 Besly, disc. (3).

No. 15 Besly, disc.

POWER HAMMERS.

25-lb. capacity, Bradley.

100-lb. capacity, Bradley.

SCREW MACHINES.

No. 2 Smurr & Kamen.
No. 3 Smurr & Kamen, (8).

Foster screw machine.

MISCELLANEOUS.

Band saw, 26".
Folder, 36".
Gear hobber, No. 3 Barber-Colman.
Jointers, 12" and 16".
Motors, all sizes, a. c. and d. c.
Paper box stitcher, Latham No. 2, new
Paper balers, (100).

Planer, 36"x36"x14' Niles.
Shaper, 16" Barker, b. g. crank.
Shear, rotary, 60" Pettingell.
Shear, 52" Niagara power square.
Shear, 11' power square.
Toilet sets, Low-down, 100 sets.
Trucks, 3 lifting.

Tons of leather belting. Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

Norton Broadway Machinery Co., 235 Broadway, Cincinnati, O.

Automatic, 24" Gridley single spindle with 2-220 volt d. c. motors.....	\$ 750.
Boring machine, No. 2 Rockford horizontal, table 24"x5'.....	750.
Gear cutter, 36"x10" Cincinnati, spur, fly wheel, late type.....	450.
Gear cutter, 36"x12" B. & S., spur.....	650.
Gear shapers, 36" Fellows, (2), each.....	650
Milling machine, No. 3-H LeBlond plain heavy duty, with rack cutting attachment, nearly new.....	1,350.
Planer, 34"x24"x10' Cincinnati, two heads on rail, nearly new.....	1,500.
Screw machine, model A Cleveland automatic, 24" capacity.....	1,250.

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave., - - - Pittsburgh, Pa.

Air compressor, Ing.-Rand, 1750 cu. ft.	Pipe machines, 2", 4", 6", 8" & 12".
Boring mill, 54" Bullard, 2 hds.	Press, No. 2 Toledo, o. b. i., 2" str.
Boring mill, 90" Niles, 2 heads.	Press, No. 34 Bliss, toggle.
Drills, upright, 10" to 36".	Press, No. 59 Toledo.
Lathes, 8" to 48"—real bargains.	Punch, Beatty, 14"x1", 42" th., m. d.
Millers, all sizes, plain & universal.	Shapers, 14", 16", 20", 24" & 32".
Miller, 30"x30"x9" Ingersoll slab.	Turret lathes, all sizes.
Over 200 Machines in stock.	What have you for sale?
Inquiries solicited.	

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Bolt cutter, 1" Acme.	Lathe, 27"x10" S. & B., heavy duty.
Bolt cutter, 3" Acme, single head.	Miller, No. 14 B. & S., with vertical.
Bolt cutter, 4-sp. Webster & Perks.	Miller, No. 25 Bilton plain.
Drill, 5" spdl. Baker Bros. hvy. duty.	Miller, No. 2 Brown & S., univ.
Drill, Avey Hi-speed sensitive with motor attached.	Miller, No. 2-AU Garvin universal.
Drills, Moline heavy duty hog, (2).	Miller, No. 34 Fox.
Drill press, 25" Buffalo.	Nut tapper, 6-sp. 14" Acme semi-auto.
Gear cutter, 36" Whiton.	Pipe machine, 6" Stoeber.
Grinder, 6"x32" Norton pl. grinder.	Pipe machine, 4" Jarecki.
Grinder, No. 1 Norton universal.	Pipe machine, 4" Oster.
Grinder, No. 2 Norton universal.	Pipe mch., 4" Oster, motor driven.
Grinder, No. 2 Acme univ. tool & c.	Pipe mch., 4" Jarecki, motor driven.
Grinder, No. 14 Bealy disc, with press.	Pipe machine, 2" Oster.
Grinder, 2 Wilmarth & Morman hand feed surface grinders.	Pipe machine, 8" Curtis & Curtis.
Hammer, 40 lbs. Williams-White Yeakley, belt drive.	Planer, 24"x24"x6" Powell.
Hammer, 650 lbs. Williams-W. Y.	Planer, 50"x50"x18" Betts.
Hammer, 800 lb. Erie City, single frame steam.	Presses, approximately 50, assorted sizes, Waterbury-Farrell Foundry, weights approx. 2,000 to 5,000 lbs.
Hammer, 800 lbs. Bement-Miles, double frame steam.	Presses, Toledo No. 83 straight sided power, 34" stroke, (7).
Hammer, 1200 lbs. Bement-Miles, double frame steam.	Radial drill, 36" Prentiss, sgl. pulley.
Lathe, 8"x108" Fitchburg Lo-Swing.	Riveter, 8"x8" Vulcan.
Lathe, 16"x8" Rahn-Larmon.	Saw, 6" Nutter & Barnes circular.
Lathe, 18"x9" Lehman.	Saw, No. 15 Lea-Simplex circ. metal.
Lathe, 18"x10" Monarch.	Screw machines, No. 2 Brown & Sharpe, wire feed.
Lathe, 20"x9" Lehman.	Screw machine, No. 2 Warner & Swasey, wire feed.
Lathe, 20"x12" Monarch.	Shaper, 20" Smith & Mills, b. g.
Lathe, 20"x14" Powell.	Turret lathe, No. 64 Bardon & Oliver, wire feed, cabinet base.
Lathe, 23"x12" Blaisdell.	Turret lathes, No. 124-G Garvin, 2" wire feed capacity (4).

SECOND-HAND MACHINERY

FOR SALE BY

P. Prybil Machine Co., Inc. 512-524 W. 41st St., New York, N. Y.

LATHES.

14"x 6' stud and bolt, P. Prybil.
16"x 6' polishing, P. Prybil.
20"x12' safety stops, taper attachments, Lodge & Shipley.
24"x14' q. c. g., Lodge & Shipley.
30"x16' q. c. g., Pond.
30"x32' back geared, shaft lathe.
36"x12' q. c. g., Lodge Davis.
40" raised 50"x14', q. c. g., Pond.

MILLING MACHINES.

64"x16" table, spindle cone, Cinn.
68"x16" tbl., s. box and pump, Cinn.

DRILL PRESSES.

9" Pulley drilling & tapp. P. Prybil.
12" post drill, 11"x18" table, hand feed, P. Prybil.
12" sensitive, 11"x11" table, Washburn Shops.
12"x4 spindle, 26"x12" table, Reed.
12 spdl. mult., 18"x24" tbl. Baush.
17" back geared, Aurora.
20" adjustable table, Reed.
30" sliding hd., adjustable tbl., Pond.
30" sliding hd., power feed, Pond.
48" arm radial, 37"x6' bed, univ.
72" arm radial, 4' 10"x8' 6" bed. Warren.

PULLEY LATHES.

36" dia. x24" face, 2 heads, Niles.
50" dia. x30" face, 2 heads, Niles.

PLANERS AND SHAPERS.

16" stroke, self-feed, Steptoe.
24" stroke, friction gear, Hendey.
26"x26"x 6' one head, Pond.
36"x36"x 6', one head, Pond.
48"x48"x16' open side, Detrick & Harvey.

BORING MILLS.

50" pulley borer, power feed, Niles.
60" 2 heads, 34" table, Niles.
84" 2 heads, 67" table, Niles.
84"x36"x3" bed horiz. borer, B. & S.

MISCELLANEOUS.

Air compressor.
Arbor presses, various sizes.
Broaching machine.
Electric drills; air riveters.
Forges and blowers.
Grinders, various sizes.

FOR SALE BY

E. L. Easley Machinery Co., 551-557 Washington Blvd., Chicago, Ill.

Boring mill, 42" Bullard vert.
Boring mill, 60" Betts horiz.
Boring mill, 60" Bullard vert.
Broacher, No. 2 LaPointe, dbl. sp.
Broacher, No. 3 LaPointe, sgl. sp.
Drill, No. 7-D Moline Hole Hog.
Drill, No. 310 Baker, heavy duty, capacity 24".
Drill, D-3 Colburn, heavy duty, capacity 3".
Drills, 1-sp., 3-sp., 4-sp., 6-sp. Allen, h. s., b. b.
Drill, multi, 8-sp. Fox.
Drill, multi, 12 sp. Valley City No. 3.
Drill, radial, 3' Hilbert.
Gear cutter, 30x10"x4 P. Flather auto.
Gear hobber, No. 1 Adams-Farwell automatic.
Gear cutter, No. 3 B. & S. 26"x8" auto.
Grinder, internal, Capitol.
Grinder, plain No. 13 Brown & S.
Grinder, surf., No. 16 Blanchard vert.
Lathes, 12"x6' Davis, 'close coupled'
Lathe, 22"x10' Bradford, s. b. g.
Lathe, 26"x24' Putnam, Pacific Coast type, q. c., fine shape.
Lathe, 33"x16' Bridgeford heavy duty, q. c.
Miller, No. 5 Brown & Sharpe pl.
Miller, No. 4-B Becker vert.
Miller, univ., No. 2 Milwaukee.
Miller, slab, 20"x30"x8' Becker-B.
Miller, slab, 24"x24"x8' 6" Ingersoll.
Miller, slab, 30"x30"x12' Newton, 1 vertical head.
Miller, univ., No. 3 Kempsmith.
Miller, Lincoln type, No. 32 Kempsmith pl., good cond., very reas.
Miller, keyseat, No. 3 J.T. Burr.
Planer, 24"x24"x6' Gray, 1 head.
Planer, 36"x36"x8' Betts, 2 heads.
Planer, 36"x36"x14' Rockford, 2 rail heads, 2 side heads.
Planer, 36"x36"x16' Ohio, 1 rail hd., 1 side head.
Planer, 38"x48"x20' Niles-B-P. 2 hds.
Press, punch, P-4 Ferracute, 2" str.
Press, punch, Pfeif & Smith deep throat, gd., 2" str.
Punch, No. 3 Long, B. & A., 1" str.
Punch, 24" thrt. Clev. "EF", s. e., 440 v., a. c. motor attached; also one with 36" throat and one with 48" throat.
Screw mchs., 3" 2", 3" Clev. auto.
Screw mchs., 1" Nat'l Acme auto.
Shapers, 24" Hendey.
Shaper, 24" Steptoe, b. g. crank.
Turret lathes, 2"x24" J. & L. flat, gd. bd., s. b. g.

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We know a good deal about Lockers, for that has been our life-time work.

We want to give you the benefit of what we know, without cost to you and without any obligation on your part to buy.

You will not be expected to purchase Terrell's Steel Lockers unless you believe it will be to your advantage, after considering the matter from every standpoint.

Terrell's Steel Lockers

Are made in a variety of styles, single or double tier. They give better service, they are sightly and sanitary, they eliminate upkeep and renewals, they reduce insurance and fire hazard, they may be moved about and added to like a sectional book-case, and their price is right.

Consult with us freely; what are your requirements?

Terrell's Equipment Company

Hall & Division Sts., Grand Rapids, Mich.

Unobtainable Elsewhere—

The Four Largest Machines

Excelled by none in this country
in point of size and excellence.

It is an opportunity unlikely to come again,
for the prices are much less than what you
might have ever expected to pay.

The Largest LATHE

120-in. Swing

"Niles-Bement-Pond"
Heavy Triple-gear
Engine Lathe—120 in.
Swing over Bed, 88-in.
Swing over Carriage—
Bed 40-ft. in length—
turns 30-ft. between
Centers—arranged for
Motor-drive—no motor.

The Largest UPRIGHT BORING MILL

16-ft. Swing

"Niles Tool Works"
Upright Boring and
Turning Mill—Heavy
pattern—16 ft. Swing
with Two (2) Heads on
Crossrail complete with
Counter-shaft and full
regular equipment.
Height under Rail—
9 ft. Table 10 ft. diam.,
with Chuck-jaws.

The FOUR LARGEST MACHINES

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the Used
Machinery
Market
await
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critical
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—built by the
most prominent
Machine Tool
Builders.

The Largest PLANER

144-in. Wide

"Niles-Bement-Pond"
Standard Heavy pattern
Planer—Planes
144-in. wide, 120-in.
in height and 30 ft. in
length inside Table
pockets—Four Heads,
two on crossrail and one
on each housing, com-
plete with Motor drive
including 35 H. P.
Gen. Electric Motor.

The Largest HORIZONTAL BORING MACHINE

12-in. Bar

Thoroughly accurate,
powerful and conven-
ient to use.
Boring bar 12" diam.,
10 ft. long. Column
that carries spindle and
working parts has trav-
erse along bed that is
about 20 ft. diam. and
15 ft. wide—Belt driven

*If we don't find in the Market Tools of High-Enough Quality—
we don't buy old Machines—Write for complete list covering
several pages of Machine Tools in plants we are now selling out.*

McCabe & Sheeran Machinery Corporation
80 Church Street, NEW YORK CITY

ReMANUFACTURED - (ORIGINATED BY US) - MACHINE TOOLS

REG. U. S. PAT. OFF.

EVERY ReMANUFACTURED MACHINE TOOL in our place represents an unusual BARGAIN. A card will bring our latest GREEN LIST containing 2900 machine tools. We welcome inspection of our plant and our process.

LATHES.

- 1-45"x24" Pond, triple gd.
- 3-38"x42" LeBlond, q. c. g.
- 15-36"x30" Pittsburgh, q. c. g.
- 1-36"x19" Johnson, triple geared.
- 6-30"x11" American, geared head.
- 15-each 28"x9", 10", 12", 14", 16", 18" and 20" Bridgeford, q. c. g.
- 3-20"x10" Lodge & Shipley, q. c. g.
- 89-28"x 8", 12" & 16" Amer., q. c. g.
- 1-18"x 8" Boye & Emmes, q. c. g.
- 1-18"x 8" Lodge & Shipley, q. c. g.
- 3-18"x 9" Lehmann, q. c. g.
- 7-17"x 6" LeBlond mfg. auto.
- 2-16"x 6" Bradford, q. c. g.
- 1-15"x 6" Sidney, q. c. g.
- 1-14"x 6" Bradford.
- 1-13"x 5" Willard.

DRILLING MACHINES.

- 1-each 3', 3½', 4' and 6' Western Radials.
- 2-No. 11 Pratt & Whitney mult. sp.
- 2-No. 11 Natic multiple spindle.
- 21-3, 4 & 6 spindle Allen, b. b.
- 1 each 1 & 2 spdl. Henry & Wright.
- 6-20" Barnes plain and b. g.
- 6-20" Rockford plain and b. g.
- 6-22" Barnes, sliding head.
- 1-26" Barnes "Camel Back".
- 1-25" Cincinnati, tapp. att.
- 1-28" Cincinnati.
- 1-34" Barnes.
- 1-36" Cincinnati, tapp. att.
- 1-40" Cincinnati.
- 1-No. 310 Baker.

PLANERS.

- 1-96"x72"x20" Bement, 4 heads.
- 1-60"x48"x16" Gray, spiral geared.
- 1-36"x36"x10" Beckett.
- 1-30"x30"x16" Woodward & P.
- 1-24"x24"x12" Whitcomb.

CRANK SHAPERS.

- 1-15" Potter & Johnston.
- 1-16" Queen City.
- 3-ea. 16", 20" & 24" Walcott, b. g.

VERTICAL BORING MILLS.

- 15-24" Bullard New Era vertical.
- 1-30" Gisholt vertical.
- 1-36" Bullard vertical.
- 1-42" Gisholt vertical.
- 1-37"-44" Colburn vertical.
- 1-48" Colburn vertical.
- 1-60" Bullard vertical.
- 1-72" Betts vertical.
- 1-10" Niles vertical.
- 1-No. 3-A universal horizontal.
- 1-No. 5 Defiance horizontal.
- 3-Foote-Burt horizontal.
- 1-Cleveland horizontal.

MILLERS.

- 2-No. 1 Brown & Sharpe plain.
- 1-No. 1 Brown & Sharpe univ.
- 1-No. 1 Cincinnati univ.
- 15-Nos. 2 & 3 Kempsmith plain.
- 2-No. 2A Brown & Sharpe univ.
- 4-No. 4 Cincinnati plain.
- 1-No. 4 Cinti. univ. hi-power.
- 1-No. 3 Brown & Sharpe vert.
- 1-No. 2B Milwaukee vert.
- 1-No. 5 Becker vert.

GEAR CUTTERS & HOBBER.

- 3-15" Gould & Eberhardt.
- 13-No. 1 Farwell.
- 2-Nos. 2-26 & 3-36 B. & S.
- 6-No. 6 Fellows.
- 1-No. 6 12 Fellows.
- 1-36" Gleason bevel.

TURRET LATHES.

- 1-31" Foster.
- 2-3x36" Jones & Lamson.
- 1-27" Brown & Sharpe.
- 3-14" Warner & Swasey.
- 5-14" Foster No. 3.
- 5-14" Foster No. 2.
- 8-17" Warner & Swasey.
- 8-17" Pratt & Whitney.
- 4-24" Gisholts.

GRINDERS.

- 46-4"x20" to 20"x96" Landis, Brown & Sharpe, Cincinnati, Modern and Norton plain and universal.

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HILL, CLARKE & CO. OF CHICAGO
649 W. WASHINGTON BLVD., CHICAGO, ILL.

Exceptional Bargains

NEW MACHINES

- No. 2 J. N. LaPointe Broaching Machine.
24"x15" Chard Lathe.
No. 3 Ohio Universal Cutter Grinder.
Nos. 1 and 2 Ohio Plain and Universal Milling
Machines.

USED MACHINES

- No. 56 National Acme Auto. Screw Machines.
No. 3—26" Brown & Sharpe Gear Cutters.
No. 13 Brown & Sharpe Gear Cutter.
No. 3 Landis Universal Grinder with equipment.
No. 2 Hendey Universal Milling Machine with
Vertical Attachment.
18"x8" Bradford Lathe with Taper Attachment.
No. 4 Covington Punch, 12" throat, $\frac{3}{4}$ " capacity.
Davis 26" Chucking Lathe.

*All in good condition. In stock
for immediate shipment.*

Large Stock Of

Hartness Die Heads and Chasers

- Nos. 3, 4, 6 and 9 Hartness Die Heads.
Standard and S. A. E. Chasers.

All New—Bargain Prices

The Biggs-Watterson Company

1235 West 9th Street
Cleveland, O.

Selected Tools At Low Prices

LATHES

- 54"x21" Pond.
- 50"x60" Johnson, ex. hvy. pat.
- 50"x30" Johnson, ex. hvy. pat.
- 50"x14" American.
- 36"x14" Bridgeford, geared head.
- 28"x12" Boye & Emmes, qck. chg.
- 26"x16" Bradford, motor driven.
- 26"x14" Niles-B.-P., quick change.
- 26"x10" Bridgeford, quick change.
- 24"x12" Schumacher & Boye, q. ch.
- 21"x 8" McCabe, q. c.
- 18"x10" McCabe, q. c.
- 16"x 8" Lodge & Shipley, q. c.
- 34"x60" Fitchburg "Lo-Swing".

McCABE 2-in-1 DOUBLE SPINDLE LATHES

- 26-48"x24", motor drive.
- 26-48"x16" motor drive.

TURRET LATHES & SCREW MCHS.

- 28" swing, Pond, rigid type.
- 24" swing, Gisholt, motor driven.
- 21" swing, Gisholt, gap.
- 21" swing, Gisholt, 3/8" hole.
- 3x30" Jones & Lamson, grd. hd.
- 2x24" Jones & Lamson, grd. hd.

BORING MILLS.

- 10-16" Betts, double head.
- 54" Niles, single head.
- 48" "Gisholt," double head.
- 42" Bullard, double head.
- 30" Bullard, turret head.

PLANERS

- 84"x60"x30" Pond, 4 hds., motor dr.
- 60"x60"x17" Sellers, 3 heads.
- 48"x48"x18" Pond, 2 heads.
- 48"x48"x14" Sellers, 3 heads.
- 42"x36"x12" Gray, 2 heads.
- 30"x30"x 6" Cincinnati, 1 hd., latest.
- 30"x30"x 6" Gray, 2 heads.
- 30"x30"x 6" Gray, 1 head.

HORIZONTAL BORING AND DRILLING MCHS.—"Knee Type"

- 23" bar, Bement Miles.
- 48" bar, Niles, 64" swing, power raise to table.
- 48" bar, B.-M., 62" sw., pwr. raise.
- 48" bar, B.-M., 62" sw., pwr. raise.
- 48" bar, Bement, power raise.

SLOTTERS

- 24" Niles-Bement-Pond (like new), complete with motor.
- 18" Putnam, motor drive.
- 14" Sellers.

RADIAL DRILLS

- 4' Fossdick, plain.
- 4' Carlton, speed box.
- 3' Carlton, speedy-sensitive.
- 3' Fossdick, plain.
- 24' Carlton, speed box.

BENDING ROLLS

- 10' 2" McCabe drop-end, balance bar type (motor or belt drive).

GEAR CUTTERS

- 11" Gleason bevel gear shaper.
- 22" Gleason, bevel gear.
- 30" Gould & E., spur and bevel.
- 36" Fellows gear shaper.

MILLING MACHINES

- No. 3H Milwaukee universal.
- No. 8 B. & S. vert., circular attach.
- No. 2 Cincinnati, vertical.
- No. 3 Cin'ti, plain, table 48x12".
- No. 22 Becker Brainerd, tbl. 48x14".
- Newton, 60x12" horizontal.
- No. 5 Hendey, q. c., Mfrs. style.

PUNCHES AND SHEARS

- 60", No. 6 Hilles & Jones horizontal, arranged for motor drive.
- 50" New McCabe.
- No. 3 Mesta, grd. alligator, m. d.
- 18" L. & A., guillotine.
- 36" No. 1 Long & Allstatter, dbl. end.

PRESSES

- No. 74 1/2 Bliss, trimming.
- No. 78 1/2 Bliss, trimming.

GRINDERS

- Bridgeport, 60x12", takes 36" bet. centers, Plain Roll Grinder.
- Landis, univ., 10" sw. takes 30" cent.
- Iroquois univ., 12" sw., 36" centers.

SHAPERS

- 28" Smith & Mills, single pulley drv.
- 24" Gould & Eberhardt.
- 16" Smith & Mills plain.

PIPE MACHINES

- 12" Curtis & Curtis.
- 10" Saunders, motor drive.

HAMMERS

- 40,000 lb. Chambersburg, dbl. frame, steam.
- 24,000 lb. N. B. Pond, dbl. frame, stm.
- 6000 lb. N. B. Pond, dbl. frame, steam.
- 4000 lb. Chambersburg, steam drop.
- 3000 lb. Erie, steam drop.
- 2700 lb. N. B. Pond, double frame, forging.
- 2500 lb. Chambersburg, steam drop.
- 2000 lb. Chambersburg, dbl. frame, forging.
- 1500 lb. Chambersburg, steam drop.
- 1100 lb. Bement, single frame.
- 4000 lb. Toledo, friction board drop.
- 200 lb. Bradley upright.
- 100 lb. Bradley, compact.

TESTING MACHINES

- 100,000 lb. Tinius-Olson tensile stnht.
- 100,000 lb. Riehle Bros. tensile stnht.

Write for Complete List of Miscellaneous Tools

J. J. McCabe Lathe & Machinery Corp'n
ROOMS 1805-10, 149 BROADWAY, NEW YORK

Harris Brothers Co.

1475 W. 35th St., Chicago, Ill.

Immediate Delivery!

GRINDERS AND SHAFT TURNING LATHES

Diamond 6"x45" Plain External Cylindrical Grinder.

Brown & Sharpe 8"x16" Universal External Cylindrical Grinder.

Landis 16x60 Universal External Grinder.

Fitchburg 12"x36" Plain External Cylindrical Grinder.

Yankee 1 1/2" Twist Drill Grinder.

Yankee 3/4" Twist Drill Grinder, Motor Drive 220 D. C.

New Britain Drop Head Polishing and Buffing Stands, Spdl. 1 1/2" dia. x 35" long—can be used as Emery Grinders. (50 machines in stock).

Single Spdl. Valve Seat Grinders (4).

PUNCH PRESSES

Ferracute D. G. G. No. 55 Straight Sided, Single Action, Dbl. Back Grd. Punch Press, Friction Clutch Drive. Distance between Uprights 25"; Area of Bed, R to L 24", F to B 31"; Stroke of Slide 16"; Ram Pressure 70 tons. Weight about 16,000 lbs. Condition 95% new.

Ferracute D. G. G. No. 56—same. Distance between Uprights, 32"; Area of Bed, R to L 30", F to B 36"; Stroke of Slide, 16"; Ram Pressure 100 tons. Weight about 22,000 lbs. Condition 95% new.

Ferracute No. E37 Toggle or Embossing D. G. G. Distance between Uprights 36"; Area of Bed, 36x36; Stroke, 24"; Ram Pressure 1500 tons. Weight (each) about 140,000 lbs. (2 machines). Condition 99% new.

Crosby No. 3 Open Back Punch Press. (Not inclinable). Stroke 24"; Area of Bed 13"x20"; Center of Slide to column 6 1/2"; Weight about 3,000 lbs. Condition 85% new.

MILLING MACHINES

Ingersoll 24"x34"x12" Table Horizontal Slab Milling Machines with INCLINED ADJUSTABLE RAIL—(Brand New) (6 machines) —Weight about 25,000 lbs.

HENDEY No. 2 1/2 Milling Machines Table 11"x30" (Automatic Feed 20") 20 Machines.

HENDEY No. 4 Milling Machines Table 9"x24" (Automatic Fd. 30") 250 Machines.

BECKER No. 7 H. Milling Machines, Table 9"x29", (Automatic Feed 20") 250 Machines.

PEDRICK & AYER No. 3 Univ. Milling Mchs. (Automatic Feeds 34"x10"x15"). Table 52"x14".

Whitney No. 6 Hand Milling Mchs. Table 20"x4" (Feeds 16"x6"x13") 10 Machines.

SMITH No. 6 Hand, Table 20"x4" (Feeds 16"x6"x13") 20 Machines.

VERTICAL MILLING MACHINES

BECKER No. 5 C Latest Improved Model Single Pulley Drive (All Geared Speeds) Table 56x14" (Auto. Fds. 54x16x14") 2 Machines

BECKER No. 5 Table 48"x13" (Auto. Feeds 40"x15"x12").

NEWTON No. 1 with Automatic

Revolving Rotary Table 22" dia. (Auto. Fds. 20"x12"x12") Swings work 33" dia.

BROWN & SHARPE No. 3 Table 60"x16" (Auto. Fds. 34"x16"x14").

GARVIN No. 22 Table 40"x9" (Feeds 24"x8"x18").

Write for a free copy of Bulletin No. 205 describing our complete stocks of Machine Tools.

Back to Lower Prices

WE CONVERT ANY NEW OR USED CONE DRIVEN TOOL INTO AN ALL-GEARED MOTOR DRIVE QUICKLY AT REASONABLE COST. FULL DETAILS AND PRICE ON REQUEST.

LATHES

9" to 13" Barnes, h. s., cp. r., new.
10"x 8" Summit, nearly new (2).
13-15-16 and 18 O. & S., h. s., c. r., new.
16"x 6" Monarch, dbl. bk. gr.
16"x 8" Columbus, new.

18"x 8" Monarch, q. c., d. b. g.
20"x 10" Prentice, taper.
24"x 12" Fay & Scott.
25"x 14" Schumacher & Boye.
8"x 60" Fitchburg Lo-Swing.

TURRET LATHES and SCREW MACHINES

24" Steinle, 6 $\frac{1}{2}$ " hol. spdl., grd. hd.
1 $\frac{1}{2}$ " Tilted turret hand screw mche.
1" and 1 $\frac{1}{2}$ " Mulholland.

2x24 & 3x36 J. & L., dbl. equipment.
No. 2 Warner & Swasey hol. hex.
Nos. 52 and 56 National Acme.

SHAPERS

14" Niles, traveling head.
14" Smith & Mills, crank.
16" & 24" Barker, b. g. crank.

24" Walcott, geared.
20" Smith & Mills, geared.
16" Springfield, crank, back grd.

PLANERS

24x24x 6" Gray.
24x24x 6" Pease.
36"x 36"x 12" Niles.
44x44x 12" Pond, 4 heads.
48x48x 16" Bement-Miles, 2 heads.

54x54x 16" Sellers, 4 heads.
60x60x 17" Betts, 2 heads.
60x60x 20" Sellers, 4 heads.
66x66x 20" New Haven, 2 heads.
84x84x 32" Putnam, 4 heads.

PRESSES

No. 18 Bliss, open back inclinable.
No. 35 Niagara, Stiles type, (2).

3-A, 4-A, 5-A and 6-A Willard.
Emco, bench, for radio parts,

DRILLS and RADIALS

3" Morris plain, gear box drive.
3 $\frac{1}{2}$ " Canedy-Otto plain, new.
Sensitive 1, 2, 3, 4 and 6 spindle.

4" Avey high speed bench, (5).
24", 28", 28" and 32", sliding head.
25" & 26" Barnes Camel Back.

**New Standard Makes 20" Drills, each \$109.50
Motors, 1 to 50 H. P., 3 ph., 220 v., G. E., New**

MILLING MACHINES

No. 25 Becker plain, (3).
Ames, Lincoln type, 10"x 40" table.
No. 1 Kempsmith universal.
No. 3 Brainard, 20x7 table.

No. 14 B. & S. plain.
No. 2 H Brown & Sharpe plain.
Briggs type "A" high duty, 24x8 table.
No. 32 Kempsmith Lincoln type, (3).

GRINDERS

Nos. 1, 3 & 78 W. & M. surface.
10x24 Norton plain.
Capital, internal, practically new.
No. 2 W. & P. 10x30 universal.

12x36 Cincinnati universal.
36" and 66" Yates plate.
6x32 Norton, plain.
12x48 Landis, plain.

MISCELLANEOUS

Band saws, metal, Klemm. (2).
Bending rolls, 8", for 8" plate.
Boring mill, 12", 2 swivel heads.
Boring mill, Bullard 34" turret hd.
Buffing lathes, W. & P., 3 ph. mtr. hd.
Cold saw, Burr. 3" capacity.
Compressors, 9x8 and 12x16, new.
Gear cutter, Whiton 36"x 9" face.
Gear millers, Bilton No. 1. (5).
Hammers, 40 lb. Bradley, helve, (2).
Hammer, 150 lb. Standard drop.

Oil groover, Garvin, nearly new.
Oil separator, Springfield.
Pipe machines, 2", 4", 6" & 12".
Pumps, Gould triplex, 6 $\frac{1}{2}$ x8" & 7x8".
Punch & shear $\frac{1}{2}$ by $\frac{1}{2}$, 10" throat.
Pyrometer, Brown 2000, 2-way.
Riveter, high speed, 1" capacity.
Shear, 5" Robinson, for 10 gauge.
Shear, No. 20 Quickwork, 30" throat.
Shear, 52" Niagara, 18 gauge.
Tapping mche., 1" Rickert-Shafer.

**THE
OSBORNE & SEXTON
MACHINERY
COLUMBUS
COMPANY
OHIO**

“ Where Values Obtain And Purchasers Gain ”

VERTICAL BORING MILLS

120" Niles, 2 swivel heads.
80" Niles-Bement-Pond, 2 sw. hds.
72" Niles, 2 swivel heads.
64" Poole, 2 swivel heads, thread cutting.
44" Niles, 1 swivel hd., 1 tur. head.
42" Putnam carwheel, hub facing attachment.
32" Rogers, swivel turret head, universal jaws.

HORIZONTAL BORING MILLS

Bement cylinder, 8" bar.
Barrett No. 2 cylinder, 5" bar.
Beaman & Smith No. 2 floor boring, drill and milling machine, 4" bar.
Lucas "Precision" boring, drilling and milling machine, 3½" bar.
Niles boring drilling mche., 4" bar.
Betts boring drilling mche., 5" bar.
Bement bor. drilling mche., 3½" bar.
Newark bor. drilling mche., 3" bar.
Bement bor. drilling mche., 3" bar.
Bement bor. drilling mche., 2½" bar.
Harnes drill'g tap. mch., 2 3/16" bar.
Underwood type 4½" bar. floor plate 8'x9'.

LATHES

21' triple geared face plate drive Pit Lathe for slotting, facing & boring.
60"x30" Fifield, face plate dr., 22" cent.
62"x22" Putnam, triple grd., internal face plate drive, 13" centers.
62" Pulley, triple grd., face plate dr.
36"x20" Putnam, triple geared, face plate drive.
30"x12" Niles-Bement-Pond, geared head, heavy duty, quick change.
24"x14" Prentice, geared friction head, quick change.

NEW DOUBLE LEATHER BELTING

5" center stock.....\$.84 per ft.
16" center stock..... 1.68 per ft.

PUNCHES, SHEARS, ETC.

Pels Beam Shear, cap. 15" I beams.
Quickwork Rotary Shear, 48" throat, ½" capacity.
Stoll 10' Squaring Shear, No. 16 gauge.
Stoll 11' Squaring Shear, No. 16 gauge.

PUNCHES, SHEARS, Etc.—Cont.

No. 8 Long Allstatter double end Punch & Shear, ½" punching cap.
No. 121 Toledo Boiler Maker Punching & Riveting Machine.
Long & Allstatter Hor. Punch, capacity 1½" to 1".
No. 2 Williams & White Cold Bending & Straightening machine.
No. 6 Beatty S. E., Punch, 25" Throat, double gap.
No. 7 Beatty S. E. Punch 15" throat.
1" Acme Hot Nut Punching Mche.

PRESSES

No. 4 A Bliss, adjustable bed, 4" stroke, weight 5800 lbs.
DG 5 Ferracute geared, 3" stroke weight 8700 lbs.
No. 60½ Bliss, rack and pinion reducing, adjustable stroke 4" to 42", weight 12,500 lbs. (3).
No. 666 Toledo knuckle joint, 24" stroke, 1000 tons pressure, weight 80,000 lbs. (2).
No. 857 Toledo rack and pinion reducing, adjustable stroke 5" to 40".
No. 858 Toledo rack and pinion reducing, adjust. stroke, 5" to 36" (2).
No. 2½ E. J. Manville double acting, stroke slide ½", stroke plunger 1½".
E. J. Manville double acting, open bk.grd., st. slide 1½", st. plunger 3".
No. 10½ V. & O. dbl. acting, stroke slide 1", stroke plunger 1½" (5).
NEW No. 34 Excelsior 225 ton Hydraulic Tire Applying Press (2).

PLANERS

96"x96"x37' Planer, 4 heads.
14' Hilles & Jones Plate Planer.
72"x72"x14' Pond, 4 heads.
72"x70"x14' Sellers, 3 heads.
48"x48"x14' Patch, 4 hds., latest type.
42"x42"x14' Pond, 4 heads.
32"x36"x20" Woodward Powell, 2 hds.
36"x36"x12" Bickett, hvy. duty, 2 hds.
36"x36"x12" Bickett, hvy. duty, 1 hd.
16"x16"x42" Walter Bros., 1 head.
Two 28" Newton Plain index cents.

New York Machinery Exchange
50 Church Street,
NEW YORK

MILLING MACHINES—New

- 3—No. 1 $\frac{1}{2}$ Rockford univ., cone type, cap. 25x7 $\frac{1}{2}$ x18.
- 2—No. 2 $\frac{1}{2}$ Rockford univ., cone type, cap. 34x9x18.
- 1—No. 2 $\frac{1}{2}$ Rockford univ., high pwr., grd., sgl. pulley dr., cap 24x9x18.
- 2—No. 1 $\frac{1}{2}$ American plain and universal, cone type, cap. 25x9x19.
- 1—No. 0 Bickett vertical Mill and Profiler.

MILLING MACHINES—Used

- | | |
|---------------------------------|--|
| 1—No. 1 Cincinnati plain, m. d. | 1—Ingersoll slab, 20"x20"x8'. |
| 1—No. 2 Becker plain, m. d. | 1—Nos. 1 & 2 Newton keyseat |
| 1—No. 4 Cincinnati univ., m. d. | mills, m. d. |
| 6—No. 32 Kempsmith, Lincoln. | 3—No. 3 $\frac{1}{2}$ Fox, power and hand, |
| 6—P. & W. 12" Auto. Mills. | table 7x27 $\frac{1}{2}$ ". |

MISCELLANEOUS

- 3—16"x8' Sidney Lathes, q. c., d. b. g.
- 1—37" Niles Boring Mill, 2 heads
- 1—50" Sellers Car Wheel Borer.
- 1—52" Bertsch Multiple Punch.
- 3—Quickwork Rotary Shear, cap. up to 1".
- 2—Hendey Shapers, 15" and 20".
- 2—Thompson Universal Grinders 10x36".
- 12—Gisholts, 12" and 24" Turret Lathes.
- 4—Multiple Drills, 10 to 24 spindles.
- 14—Screw Machines, $\frac{1}{2}$ to 3 $\frac{1}{2}$ " cap.
- 4—Radial Drills, 3 $\frac{1}{2}$ ", 4' and 5' plain and universal.
- 5—No. 2 Oakley Universal Grinder, 10x20.
- 1—Used No. 3 Sidney Inclinable Press, weight 2600 lbs.
- 1—Used 10x24" Landis Plain Grinder.

Money back if not satisfied. Over 1,000 Machines in stock.

Wayne Machinery Co., Ft. Wayne, Ind.

Grand Rapids Specials

Broaching machine, No. 4 Burr.
Broaching machine, No. 2 J. N.
LaPointe.

Compressor, 6x6 Curtis, dbl. cyl.

Cut-off mch., No. 4 Nutter-B.

Drill, 6-sp. 14" Rockford gang.

Grinder, No. 6 Bryant, chuck g.

Hack saw, No. 7 Racine.

Hammer, H. C. Smith auto.

Lathe, 12" Hendey, tool room.

Lathe, 9x21 $\frac{1}{2}$ Sundstrand Mfg.

Lathe, 9x12 Porter-Cable.

Lathe, 16x7 Oliver, q. c. g.

Marking mch., No. 3 Slate.

Miller, No. 2-H Becker vert.

Miller, 4" P. & W. spline.

Planer, 30"x20"x8' Pond.

Press, No. 34 Consolidated, arch.

Press, No. 164 Consolidated.

Radial drill, 3' Dreses.

Radial drill, 3' Foodick.

Riveter, $\frac{1}{2}$ " Shuster.

Sand blast, Type A-6 Pangborn.

Scrap compress, No. 10 Econo-

my standard.

Shear, squaring, 96" Ohl, 16 ga.

Shear, 10' Bertsch, 11 gauge.

Turret lathe, 3x36, J. & L.

Turret lathe, 2x24, J. & L.

Turret lathe, No. 3 B. & O.

Turret lathe, No. 5 Foster.

Turret lathe, 14" Warner & S.

Wire weaving mch., S. & K.

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76" Betts, heavy modern.
60" Bickford, standard, 2 heads, low price.
8-24" Bullard Vertical Turret.

3" Betts, Horizontal, knee type.
No. 31 Rochester, horiz., floor type, motor drive.
36" Bullard vert. turret.

DRILLS

8' Niles Plain Radial.
6' Bickford, Semi-Universal Radial.
4' Gang, gear box drive.
6 spindle Baush, 1" capacity.
28" Aurora upright.

3 and 4 spindle Barnes gang.
2 spindle Foote-Burt, hvy. rail type.
6 spindle Rockford, automatic feed.
6 spindle Allen sensitive.

LATHES

60"x20' Fifeild, D. C. motor drive.
38"x30' New Haven, 23' centers, 5 s. c., belt drive.
36"x14' Putnam triple geared.
36"x21' Pond, double head.

28"x14' Fitchburg, 3 s. c., d. b. g.
20"x 8' Lodge & Shipley.
Six J. B. Morris 18"x8' qk. change, 3 s. c., d. b. g., like new.
12"x5' P. & W.

MILLING MACHINES

8-No. 5C Becker Verticals, new.
No. 3 LeBlond, plain, high duty.
No. 2 Kempsmith Universal.
50"x8' Ingersoll Slab.

No. 25 Becker Plain.
No. 2 Hendey Norton Plain.
No. 14 Hendey Norton Universal.
Garvin No. 15 Vertical, planer type.

PLANERS

84"x84"x13' Sellers, 3 hds., belt dr.
48"x48"x14' Powell, 4 heads, reversible motor drive, complete with electrical equipment.
48"x48"x16' Bement-Miles, 4 heads, belt driven.

42"x42"x12' Pond Machine Tool Co., 2 heads, belt driven.
36"x36"x12' Niles-Bement-Pond, 3 heads.
30"x30"x10' Flather, 2 heads, belt driven.

PRESSES

No. 55 Adriance S. A.
No. 512 Bliss, triple action.

No. 1 Farrel, straight side, 8" stroke.

SHAPERS

4-15" Hendey, box table and vise.
3-48" Morton, extra hvy., draw-cut.

15" Smith & Mills, box table and vise.

MISCELLANEOUS

10' Bement Boiler Plate Rolls.
12" New Haven Slotter.
No. 126 Buffalo Slitting Shear (new).
10" Newton Slotter (new).
8" Curtis & Curtis pipe machine, with dies, etc.
Drill, 24" Barnes Drill Co., all geared, like new.

Grinder, No. 2 Bath Universal.
Shaper, 18" Ohio, back geared.
Turret Lathe, Greenlee flat turret lathe, fine condition.
Slotter, Dill 15-18, new, in crate.
Betts slotter, 14" to 28" table, 30" gap, fine.

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Classified Finding Index

- Air Guns**
Powell Co., Wm., Cincinnati
- Angle Plates**
Germanow-Simon Mch. Wks., Rochester, N. Y.
- Arbors, Solid**
Nicholson & Co., W. H., Wilkes-Barre, Pa.
- Automatics**
National Acme Company, Cleveland
New Britain Machine Co., New Britain, Conn.
- Balancing Ways**
Anderson Bros. Mfg. Co., Rockford, Ill.
- Ball Bearings**
Abbott Ball Co., Hartford, Conn.
- Balls, Brass, Bronze and Steel**
Abbott Ball Co., Hartford, Conn.
- Band Saw Machines, for Metal**
Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
- Barrels, Tumbling**
Abbott Ball Co., Hartford, Conn.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Bearings, Babbitted**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Bench Legs, Steel**
New Britain Mch. Co., New Britain, Conn.
- Bending Machines, Hand and Power**
Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mch. Co., T. H. 417 E. 31st., N. Y.
Lourie Mfg. Co., Springfield, Ill.
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia
- Boring Bars**
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia
- Boring Bars, Cylinder**
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia
- Boring, Drilling and Milling Machines, Horizontal**
Barnes Co., W. F. & John, Rockford, Ill.
Beaman & Smith Co., Providence, R. I.
- Boring Machines, Horizontal**
Avery Drilling Machine Co., Cincinnati
Pedrick Tool & Machine Co., Philadelphia
- Bronze**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Bushings, Brass and Bronze**
Bunting Brass & Bronze Co., Toledo, O.
Johnson Bronze Co., New Castle, Pa.
- Case Hardening Compound**
Buchanan Chemical Co., C. G., Cincinnati
- Casters for Trucks**
Hamilton Caster & Mfg. Co., Hamilton, Ohio
- Centers, Index**
Carter & Hakes Mch. Co., W. Winsted, Conn.
Dickow Machinery Co., Fred C., 2105 W.
Lake St., Chicago
Fay & Scott, Dexter, Maine
Willard-Middletown Machine Co., Middle-
town, Ohio
- Chains, Power Transmission**
Cullman Wheel Co., 1344 Altgeld St., Chicago
Whitney Mfg. Co., Hartford, Conn.
- Chasers**
National Acme Co., Cleveland
- Chucking Machines**
New Britain Mch. Co., New Britain, Conn.
- Chucks, Centering**
McCrosky Tool Corporation, Meadville, Pa.
- Chucks, Drill**
Jacobs Mfg. Co., Hartford, Conn.
McCrosky Tool Corporation, Meadville, Pa.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Drill and Tap**
McCrosky Tool Corporation, Meadville, Pa.
Peter Bros. Mfg. Co., Algonquin, Ill.
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Keyway Cutting**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
- Chucks, Magnetic**
Heald Machine Co., Worcester, Mass.
- Chucks, Oval**
Prybil Machine Co., P., 512 W. 41st, N. Y.
- Chucks, Wrenchless**
Thomas Elevator Co., 31 S. Hoys Ave.,
Chicago
- Cold Saws**
Burke Machine Tool Co., Conneaut, Ohio
Cochrane-Bly Co., Rochester, N. Y.
Peter Bros. Mfg. Co., Algonquin, Ill.
- Collets, Laths and Screw Machine**
Morrison Machine Products, Inc.,
Rochester, N. Y.
- Couplings, Flexible**
Cooper Flexible Transmission Co., Inc.,
Brooklyn
- Cranes, Portable**
Canedy-Otto Mfg. Co., Chicago Heights, Ill.
Canton Foundry & Mch. Co., Canton, Ohio
- Crank Pin Turning Machine**
Pedrick Tool & Machine Co., Philadelphia
Underwood Corp., H. B., Philadelphia
- Cutters, Adjustable**
McCrosky Tool Corporation, Meadville, Pa.
- Cutters, Keyseating**
Scully-Jones & Co., Ry. Exch. Bldg., Chicago
Whitney Mfg. Co., Hartford, Conn.
- Cutters, Milling**
Whitney Mfg. Co., Hartford, Conn.
- Cutting-Off Machines**
Etna Mfg. Co., Toledo, Ohio
Peter Bros. Mfg. Co., Algonquin, Ill.

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Cylinder Boring Machines, Portable
 Pedrick Tool & Machine Co., Philadelphia
 Underwood Corp., H. B. Philadelphia

Cylinder Grinders
 Schmidt Co., B. L., Davenport, Iowa

Cylinder or Dome Facing Machines
 Underwood Corp., H. B., Philadelphia

Defectoreads
 Bennett Metal Treating Co., Elmwood, Conn.

Die Heads, Self-Opening
 National Acme Company, Cleveland

Dies, Pipe Threading
 Signalite Keeler-Mcbe. Waa., Edwardsville, Ill.

Dies, Screw and Thread Cutting
 Greenfield Tap & Die Corp., Greenfield, Mass.
 National Acme Company, Cleveland

Dies, Self-Opening Adjustable
 Greenfield Tap & Die Corp., Greenfield, Mass.
 Rickert-Shaffer Co., Erie, Pa.

Drilling Machine Heads
 Nelson-Blanch Mfg. Co., Detroit, Mich.
 United States Drill Head Co., Cincinnati

Drilling Machines, Bench
 Avey Drilling Machine Co., Cincinnati
 Barnes Co., W. F. & John, Rockford, Ill.
 Burke Machine Tool Co., Conneaut, Ohio
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.
 Reed Co., Francis, Worcester, Mass.
 Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Multiple Spindle
 Avey Drilling Machine Co., Cincinnati
 National Acme Company, Cleveland
 Reed Co., Francis, Worcester, Mass.
 Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Post
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.
 Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.
 Mueller Machine Tool Co., Cincinnati
 Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
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 Barnes Co., W. F. & John, Rockford, Ill.
 Burke Machine Tool Co., Conneaut, Ohio
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.
 Reed Co., Francis, Worcester, Mass.
 Taylor & Fenn Co., Hartford, Conn.
 U. S. Machine Tool Co., Cincinnati, O.
 Wisconsin Electric Co., Racine, Wis.

Drilling, Milling and Boring Machines, Vertical
 Aurora Tool Works, Aurora, Ind.

Drilling Machines, Vertical
 Aurora Tool Works, Aurora, Ind.
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 Barnes Co., W. F. & John, Rockford, Ill.
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.
 Taylor & Fenn Co., Hartford, Conn.

Drilling and Tapping Attachments
 Aurora Tool Works, Aurora, Ind.
 Barnes Co., W. F. & John, Rockford, Ill.
 McCroskey Tool Corporation, Meadville, Pa.
 Reed Co., Francis, Worcester, Mass.

Drills, Portable Electric
 Hissy-Wolf Machine Co., Cincinnati
 Independent Pneumatic Tool Co., 800 W.
 Jackson Blvd., Chicago
 Wisconsin Electric Co., Racine, Wis.

Dust Handling Equipment
 Knickerbocker Co., Jackson, Mich.

Emery Stands
 Blount Co., J. G., Everett, Mass.
 Marchick Mfg. Co., Inc., Indianapolis, Ind.

Emery Wheel Dressers and Cutters
 Taylor & Fenn Co., Hartford, Conn.

Facing Heads, Automatic
 Mummert-Dixon Co., Hanover, Pa.

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 Chicago

Feeders, Oil and Soda Water
 New Britain Machine Co., New Britain, Conn.

Forges
 Canedy-Otto Mfg. Co., Chicago Heights, Ill.

Forgings, Hollow Bored
 American Hollow Boring Co., Erie, Pa.

Furnaces
 Bennett Metal Treating Co., Elmwood, Conn.

Furniture, Machine Shop
 New Britain Machine Co., New Britain, Conn.

Grinding Machines, Bench
 Blount Co., J. G., Everett, Mass.
 Hissy-Wolf Machine Co., Cincinnati

Grinding Machines, Cutter, Reamer and Tool
 Blount Co., J. G., Everett, Mass.
 Manhattan Machine & Tool Works., Grand
 Rapids, Mich.
 Marchick Mfg. Co., Inc., Indianapolis, Ind.
 Mummert-Dixon Co., Hanover, Pa.
 National Acme Co., Cleveland
 Thompson Grinder Co., Springfield, Ohio
 Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Cylinder
 Heald Machine Co., Worcester, Mass.
 Schmidt Co., B. L., Davenport, Iowa
 Whitney & Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical
 Manhattan Machine & Tool Works., Grand
 Rapids, Mich.
 Schmidt Co., B. L., Davenport, Iowa
 Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
 Manhattan Machine & Tool Works., Grand
 Rapids, Mich.
 Thompson Grinder Co., Springfield, Ohio
 Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Drill
 Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Face
 Marchick Mfg. Co., Inc., Indianapolis, Ind.
 Taylor & Fenn Co., Hartford, Conn.

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Grinding Machines, Internal

Greenfield Tap & Die Corp., Greenfield, Mass.
Heald Machine Co., Worcester, Mass.
Schmidt Co., B. L., Davenport, Iowa.
Taylor & Fenn Co., Hartford, Conn.
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Whitney & Son, Haxter D., Winchendon, Mass.
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Oilstone

Mummert-Dixon Co., Hanover, Pa.

Grinding Machines, Portable

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Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Marachke Mfg. Co., Inc., Indianapolis, Ind.
Mummert-Dixon Co., Hanover, Pa.
Wisconsin Electric Co., Racine, Wis.

Grinding Machines, Snagging

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Rapids, Mich.
Marachke Mfg. Co., Inc., Indianapolis, Ind.

Grinding Machines, Surface

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Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Universal

Greenfield Tap & Die Corp., Greenfield, Mass.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Hack Saw Machines

Armstrong-Blum Mfg. Co., 341 N. Francisco
Av., Chicago
Racine Tool & Machine Co., Racine, Wis.

Hammers, Air

Independent Pneumatic Tool Co., 600 W.
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Hammers, Belt & Motor Driven

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Thomas Elevator Co., 31 S. Hayne Ave.,
Chicago

Hoists, Portable

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Cooper Flexible Transmission Co., Inc.,
Brooklyn

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Bucher-Smith Co., East Liverpool, Ohio
Chattanooga Mch. Co., Chattanooga, Tenn.
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Lathes, Automatic

National Acme Company, Cleveland

Lathes, Bench

Bloom Co., J. G., Everett, Mass.

Lathes, Engine

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Milling Machines, Hand

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Rollers, Iron, Solid and Split

Pratt Foundry Co., 325 N. Sangamon St.,
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Walsh Press & Die Co., 4709 W. Kinzie St.,
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McCroskey Tool Corporation, Meadville, Pa.

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Biggs-Watterson Co., Cleveland
Botwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Mch. Supply Co., Cincinnati
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50 Church St., New York

McDonald Machinery Co., St. Louis
McMullen Mch. Co., Grand Rapids, Mich.
New York Mch. Exchange, 50 Church St.,
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Niles-Bement-Pond Co., 111 Broadway, N.Y.
Norton Broadway Mch. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia

Osborne & Sexton Machy. Co., Columbus, O.
Pattison Supply Co., W. M., Cleveland
Prybil Machine Co., P., 512 W. 41st, N. Y.

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Reeve-Fritta Co., 37 S. Desplaines, Chicago
Reliance Mch. Sales Co., Pittsburgh, Pa.

Russell Machine Co., Pittsburgh, Pa.
Scott-Bansbach Mch. Co., 32 N. Clinton St.,
Chicago

Simmons Machine Co., Albany, N. Y.
Sloehr Mch. Co., A. M., 544 N. Wells St.,
Chicago

Strong, Carlisle & Hammond Co., Cleveland
Toomey, Inc., Frank, Philadelphia
Tutor, Velick & Co., Inc., Lake & Desplaines
Stn., Chicago

Wayne Machy. Co., Fort Wayne, Ind.
Winterer, Herman L., Philadelphia
White Machy. Co., A. D., 106 N. Jefferson
St., Chicago

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How Flexible Shaft Co., Philadelphia

Shafts, Steel
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Kidder Mfg. Co., J. F., Burlington, Vermont
Lewthwaite Machine Co., T. H., 417 E. 31st
St., New York

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Tucker, W. C. & F. C., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power
Hendley & Whittmore Co., Beloit, Wis.
Quickwork Co., St. Marys, Ohio

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Quickwork Co., St. Marys, Ohio

Sprockets
Culman Wheel Co., 1344 Altgeld St., Chicago

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Towsley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Swaging Machines
Etna Mfg. Co., Toledo, Ohio

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National Acme Company, Cleveland

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Av., Chicago

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Av., Chicago

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Av., Chicago

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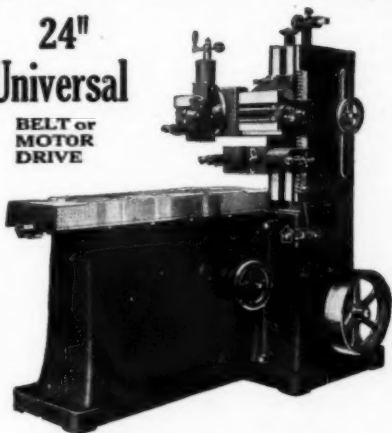
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A Table-Stroke Shaper

24"
Universal

BELT or
MOTOR
DRIVE



Larger Output—Greater Accuracy—Wider Range

A larger output of greater accuracy is insured by its fine precision and its capacity for heavy cuts at speeds ranging up to 40 table strokes a minute.

Its wider range covers everything that can be done on shapers having the ram stroke, and extends beyond that up to and including the work of a small open-side planer.

Made by experienced builders of accurate jigs, fixtures and machine tools, insuring the highest-grade construction.

*Say the word and we'll be pleased to post you
This may be just what you have been looking for*

Universal Machine & Tool Co.
Canton, Ohio

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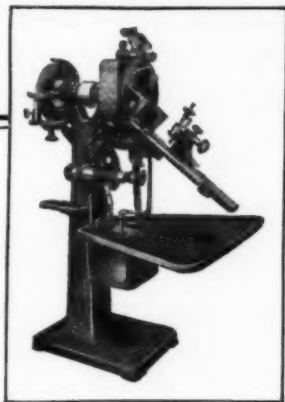
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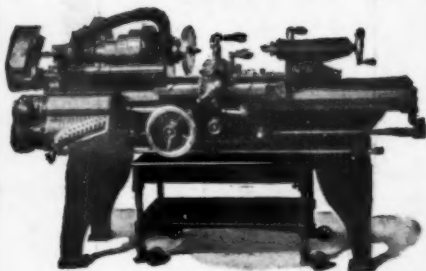
Holes cost less when
drills are ground on
Improved New Yankee
D r i l l G r i n d e r s .

Wilmarth & Morman Co.

*For 22 years manufacturers of Precision Surface, Uni-
versal Cutter and Tool and New Yankee Drill Grinders.*

**1185 MONROE AVENUE, N. W.
GRAND RAPIDS, MICHIGAN**

Your Lathes are not complete without
"N. B." Portable Lathe Pans



MODERN LATHES make lots of chips, and you need Lathe Pans that are sturdy, that have a good capacity, that are quickly moved in and out and cleaned, and that save the oil.

"NEW BRITAIN" Cast Iron Portable Lathe Pans are practically unbreakable. They have ample capacity and carry up to 500 lbs. They have ball-bearing swivel casters, and are easily moved out, cleaned, and returned to place. A cock is provided for drawing off and saving the oil. Made in a wide range of sizes—in the double type for lathes 16 in. and over from floor, and single type for 15 in. and under.

Free Bulletin No. 1218 explains them fully

The New Britain Machine Company

**"Shop Furniture
Originators"**



**New Britain,
Conn. U.S.A.**

